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Trends Before the San Diego Trolley

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A San Diego Trolley Guideway Implementation Monitoring Study Report

July 1982

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Interim Report
July 1982

Prepared by
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Prepared for
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Urban Mass Transportation Administration
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Abstract

TITLE: San Diego Trolley
Guideway Implementation Monitoring Study
Phase I: Before Implementation

AUTHOR: San Diego Association of Governments

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ABSTRACT: This report contains a general description of the San Diego Area and the San Diego Trolley. The transportation, land use, economic and social characteristics of the area served by the San Diego Trolley are presented.

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FOREWORD

A substantial amount of interest has been generated in San Diego's new light rail system. This 16 mile system is the first system of its type to become operational in several decades and was constructed entirely without Federal funds. State and local officials, therefore, are interested in how the system was planned and financed, what contributed to the form the system took, and what its effects are going to be on the city it serves.

To help provide some of these answers, the Urban Mass Transportation Administration's Section 8 Planning Program is funding an assessment of the San Diego Trolley's impacts. The San Diego Association of Governments, in cooperation with the San Diego Metropolitan Transit Development Board, is conducting this work, which focuses on changes in travel characteristics, land use, and socioeconomic conditions.

This report is the first major output from the San Diego study, providing an overview of the system and the metropolitan area around it. This document contains much of the baseline or "before" data against which the future study results will be assessed. It also provides a fascinating glimpse of the conditions which made the system possible and the local decision-making process which led to its implementation.

Additional copies of this report, plus the future volumes resulting from this study will be available at cost from the National Technical Information Service, Springfield, Virginia 22161. Please reference UMTA CA-09-7006-82-1 in your inquiries about the document.

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CHAPTER 1
EXECUTIVE SUMMARY

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Executive Summary

The San Diego Trolley represents a unique opportunity to study the impact of light rail transit on the modern urban environment, because it is the first light rail system to be built in this country in several decades. Planned, designed and constructed by the San Diego Metropolitan Transit Development Board (MTDB), the Trolley started operation in the summer of 1981.

To evaluate the impact this system will have on travel characteristics, land use, and socioeconomic conditions in the area, MTDB and the San Diego Association of Governments (SANDAG) have developed a three-phase Guideway Implementation Monitoring Study, with funding support from the Urban Mass Transportation Administration (UMTA).

Unlike other rail transit impact studies which have attempted to measure a broad range of transportation effects, this impact study will concentrate on more localized changes in travel characteristics, land use development, and socioeconomic conditions. Five and 10-year follow-up studies are planned.

San Diego County contains over 4,200 square miles in the extreme Pacific Southwest corner of the United States. The urbanized area lies within the western third of the region along the coastal plain and foothills. The eastern two-thirds contain mountains and desert and is, for the most part, in public ownership. San Diego is relatively isolated from the rest of Southern California, with mountains to the east, the ocean to the west and a large military reservation to the north. The southern boundary is the Mexican border, which is not geographically distinct, but presents a strong barrier to travel and economic interaction. Tijuana, immediately south of the border, has a population of over 700,000 persons.

In 1980, the total regional population of the San Diego County region was 1.86 million persons, with over 1.4 million persons living in the southern part of the urbanized area which includes central San Diego. Population density is relatively low; 450 persons per square mile for the county as a whole; 1,350 persons per square mile for southern portion of the urbanized area.

The San Diego economy has diversified significantly from the military and aerospace dominance which characterized it from the 1940's through the early 1960's. Of the 750,000 jobs in the region, 17% are military related, 14% are manufacturing and 21% are tourist related.

Between 1970 and 1980, San Diego County was the fifth fastest growing metropolitan area in the country. During this decade, the region grew by 37%, or 3.2% a year. In comparison, California grew by 1.7% a year; the nation by 1.1%. All geographic subareas of the region and all but one city gained population. The central urbanized area, which contains the northern portion of the light rail corridor, had the lowest growth; the south suburban area, which contains the remainder of the light rail corridor, had the next lowest growth.

Population growth is shown in Table 1:

TABLE 1

POPULATION GROWTH
1970 - 1980

Area	1980 Population	1970-80 Increase	
		Number	Percent
Central San Diego	495,500	21,800	4.6
North Suburban	436,300	147,900	51.3
South Suburban	195,600	56,600	40.7
East Suburban	331,300	103,200	45.2
North County Urban Area	389,000	168,700	76.6
East County (Rural)	14,100	5,800	69.9
TOTAL COUNTY	1,861,800	504,000	37.1

SOURCE: SANDAG, Census 1980, Volume 1.

San Diego is a single county region, although the county government itself has a limited role in regional transit planning. In the north county, a single agency has the responsibility for short-range transit planning and transit operations. SANDAG, the Regional Transportation Planning Agency and Council of Governments, is responsible for long-range transit planning throughout the region, as well as general regional planning activities.

The San Diego Metropolitan Transit Development Board (MTDB) was created by State law in 1975, with the specific charge to determine feasibility and implement a fixed guideway system in the southern portion of the urbanized area. Originally, the MTDB was precluded from operating a bus system until a guideway system was in operation. Although this prohibition was removed, MTDB has never exercised this option. The MTDB area of jurisdiction is shown on Figure 1.

Within the MTDB area, the individual cities receive allocations of state sales tax money on the basis of population to provide transit service. These cities can either contract for transit service with another operator or provide their own intra-city service. There are five fixed-route

FIGURE 1
SAN DIEGO URBAN AREA

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transit operators, three taxi-based dial-a-ride services, four accessible dial-a-ride services and one light rail service in the MTDB area. MTDB has short-range planning and coordination responsibility for all of these operations. MTDB and SANDAG must approve the funding for each of these operations.

San Diego Transit Corporation (SDTC), which is owned by the City of San Diego, is by far the largest operator in the region, as shown in Table 2. SDTC provides intercommunity service to most of the other cities in the southern part of the urban area by contract. It is the only federally funded transit operator in the MTDB area. All other service is provided through contracts with private-sector operators.

TABLE 2

PUBLIC TRANSIT OPERATORS
SAN DIEGO REGION
(FY81 Statistics)

Fixed-Route Systems	# Vehicles	# Revenue Passengers	# Revenue Miles
*San Diego Transit	312	26,131,600	11,320,800
North County Transit District	112	6,000,000	6,700,000
*Chula Vista Transit	12	428,800	487,000
*National City Transit	8	234,287	232,900
*County Transit System	14	395,000	797,400
Rural Bus System	8	13,500	134,500
*Strand Express	4	106,500	133,600
*San Diego Trolley	14	(Began operations 7/81)	
Dial-A-Ride Systems			
El Cajon Express	20**	196,100	376,000
La Mesa Dial-A-Ride	15**	151,300	327,854
Lemon Grove Dial-A-Ride	3**	37,300	50,100
Coronado Dial-A-Ride	1*	12,700	16,600
Elderly and Handicapped Systems			
*San Diego Dial-A-Ride	24	141,900	416,000
*Handytrans (Chula Vista)	4	25,200	84,000
Lifeline (North County)	7	20,000	125,000
*WHEELS (East County)	6	20,800	165,800
*National City Dial-A-Ride	1	(To begin operations 10/81)	

*Within the MTDB area.
**On an as-needed basis.

SOURCE: SANDAG, 1981 Regional Transportation Improvement Program.

THE SAN DIEGO TROLLEY

The San Diego Trolley is classified as a light rail transit (LRT) system. The vehicles are manually operated and there is minimal grade separation. The Trolley uses overhead power pick-up and has the capability of operating on city streets which remain open to automobile traffic.

Route Description

The Trolley system is 15.9 miles in length, operating between Centre City San Diego and the International Border with Mexico at San Ysidro. It operates on existing streets for a distance of 1.7 miles in Centre City. The vehicles travel at-grade on an exclusive, reserved path typically in the center of the street. Eventually, the 3/4 mile portion within the major office district will be developed as a pedestrian and transit way. However, during the initial stage of the guideway operations, automobile traffic is permitted adjacent to the Trolley path in this area. Preferential signalization is used to minimize interference with auto traffic at intersections. There are seven "stops" within Centre City with approximately quarter-mile spacing. The Trolley route is shown on Figure 2.

The remaining 14.2 miles of the system operates on the rehabilitated rail facilities of the San Diego and Arizona Eastern (SD&AE) Railway. The main line of the SD&AE Railway is located on the east side of Interstate 5 and Harbor Drive from the International Border to just south of San Diego Centre City. Most of the SD&AE Railway was a single track, at-grade system designed for freight operations. Light rail transit operations required that the existing track and roadbed be upgraded. All grade crossings are protected by automatic crossing gates which are activated by approaching light rail and freight trains. Although service was initiated as a single track operation, a double track system will be operating within a year.

The 11 suburban stations are modest, low level platforms with a waiting shelter, benches, light standards, transit information, ticket machines, public telephones and trash receptacles. Except for the International Border facility, the stations are not manned, and nc restroom facilities are provided. A television surveillance system is monitored by the Trolley dispatcher. Approximately 2,000 free parking spaces are provided at six suburban stations. All stations have pedestrian access, bus access, and bicycle storage facilities. Local bus routes and schedules have been modified to provide feeder service to the Trolley.

Operating Characteristics

A fleet of 14 Siemens-Duwag U2 light rail transit vehicles is used to provide transit service. Trains consisting of two and three cars are currently being used, with five trains in operation at most times. Each articulated vehicle is capable of carrying up to 200 passengers. Thus, one driver operating a three-car train can carry up to 600 passengers. Each car is equipped with one wheelchair lift.

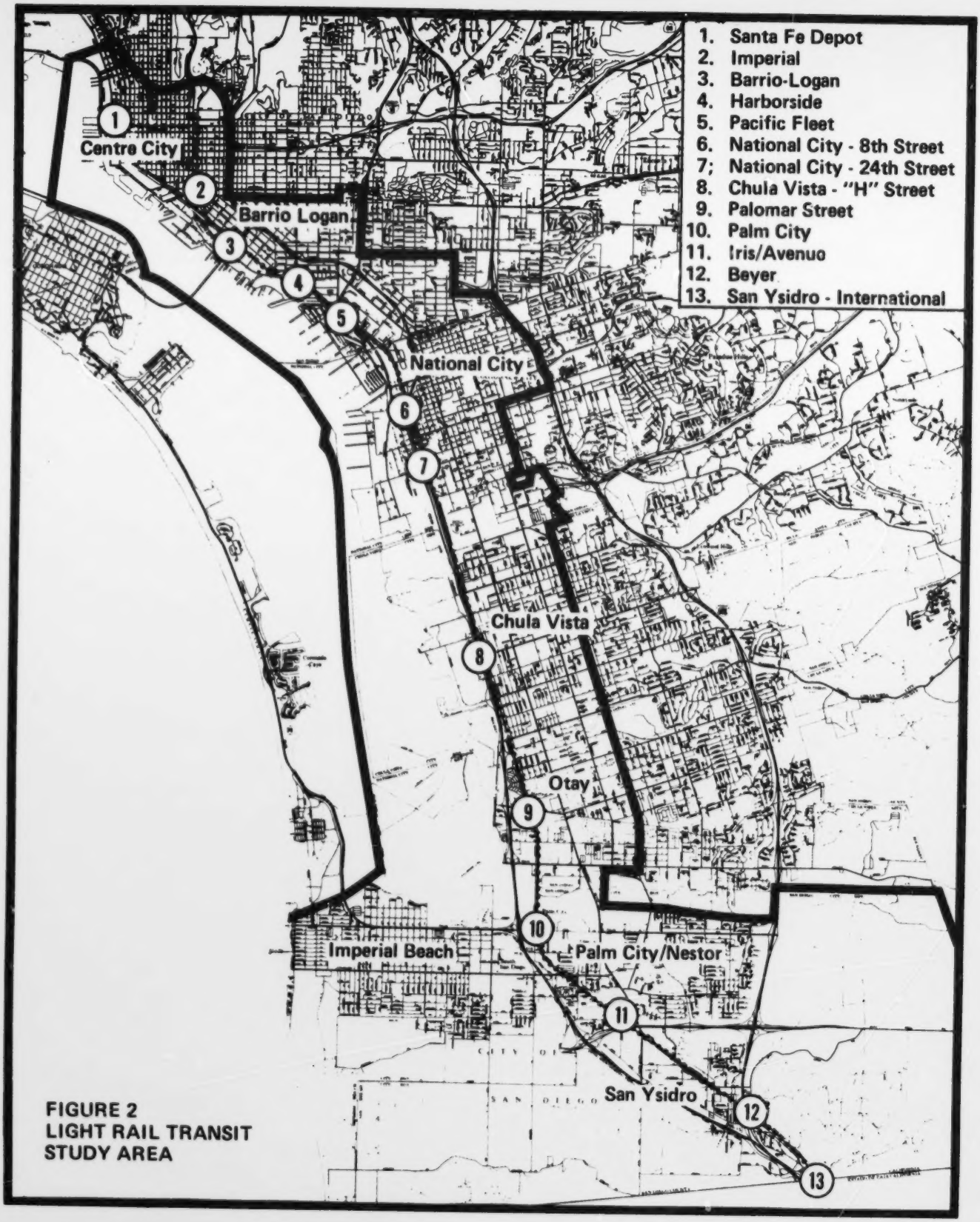

FIGURE 2
LIGHT RAIL TRANSIT
STUDY AREA

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The Trolley operates seven days per week. Trains are scheduled at 20-minute headways between 5:00 AM and 9:45 PM. Once double-tracking is complete, the Trolley will operate at 15-minute headways and service will be extended from 9:45 PM to 1:00 AM on 30-minute headways. Travel time between Centre City and the International Border is approximately 42 minutes. The average system speed through Centre City is nine miles per hour. Along the railway portion of the right-of-way the trains average 25-30 miles per hour. Overall speed is 22 miles per hour. The running time from end to end is approximately twice as fast as the previous local bus service (Route #32).

The LRT system uses a self-service, barrier-free, fare collection method. Self-service "vendomat" machines are used by the passengers to purchase a single ride ticket or validate a multiple-ride ticket before boarding the train. No fare payment or ticket collection is made aboard the LRT vehicle. However, passengers are subject to inspections by roving transit personnel to assure that a ticket purchase was made. Violation rates are estimated at less than 1%. The base one-way fare for the Trolley is $1.00, with travel within Centre City costing $0.25. Reduced senior-handicapped fares, a monthly regional pass and the multiple-ride tickets are available.

Patronage Forecasts

Total guideway patronage forecasts range from 28,000 to 30,000 daily in 1995. The seven Centre City stops were expected to represent a major portion of guideway activity, ranging from 50% to 68% of the daily patronage. First year patronage was estimated at 9,800 trips per day.

The trip purpose distribution of forecasted guideway ridership reveals that home-work trips predominate over other trip types, representing 37% to 42% of all guideway usage (excluding border crossings). Approximately 15% of the border-crossing travelers using San Diego Transit were destined to a work location. Peak-hour guideway patronage is expected to represent approximately 10% of the daily usage. Relatively low peak hour demand on the Trolley reflects the flat all-day distribution of border-crossing travel. Only 7.0% of border crossings occur during the peak hour.

Project Cost and Funding

The light rail project is being developed in two phases. The original Phase 1 project included all those activities required to implement a 15.9 mile single track LRT system utilizing 14 light rail vehicles. Phase 2, which is scheduled for completion in December 1982, involves the complete double-tracking of the LRT line, additional traction power equipment, and the purchase of 10 additional vehicles. System costs are shown in Table 3.

TABLE 3

LIGHT RAIL SYSTEM COSTS

PHASE 1	
Vehicles (14)	$ 12,000,000
Construction and Other Procurement Contracts	35,200,000
SD&AE Acquisition	18,100,000
Non-SD&AE Right-of-Way	4,000,000
Engineering and Construction Management	7,000,000
Interest on Fund Advances	9,000,000
Start-Up Activities	700,000
Total	$ 86,000,000
PHASE 2	
Double Tracking	$ 23,300,000
Vehicle Purchases (10)	9,600,000
Additional Tracktion Power	3,100,000
Total	$ 36,000,000
GRAND TOTAL:	$122,000,000

SOURCE: Metropolitan Transit Development Board.

Guideway operating costs are estimated to be $3.7 million per year based upon 1981 dollars. Approximately 62% of this budget will go toward labor costs.

Nearly 90% of the capital expenditures for Phase 1 was derived from state gas tax revenues. This funding source produces about $15 million annually. The remainder of Phase 1 funding was obtained from state sales tax revenues. The Phase 2 project is also being funded from state sales tax monies.

DEVELOPMENT OF THE TROLLEY

The first serious discussions of a fixed guideway transit system for the San Diego region began in 1971 as a part of the development of the Regional Comprehensive Plan. In 1974, county voters approved a ballot proposition which permitted up to 25% of the state gasoline tax to be used for the construction of guideway transit systems. A 60-mile, intermediate capacity guideway system was adopted as part of the first Regional Transportation Plan in 1975. The state legislation creating MTDB in 1975 directed that the planning and design of exclusive mass transit guideways be pragmatic, low cost, and incremental in nature. Based on these directions, the following principles were adopted at the initiation of the Guideway Planning Project:

- The selected corridor should extend a long distance and offer high speed operation.

- The guideway system capital cost should be low.

- The guideway system should be primarily at-grade and primarily within exclusive right-of-way.

- The transit system operating costs should be low, and the guideway system should attempt to meet operating costs out of fares (although this was not a prerequisite for system feasibility).

- The project should measure the impact of the proposed transit system on residential growth.

To determine the feasibility of guideway transit in San Diego, the MTDB initiated an 18-month Guideway Planning Project study. The project was conducted in two phases. Phase I was initiated in December, 1976, and involved evaluation of candidate corridors based on the Regional Transportation Plan. Phase II began in April, 1977, and involved further screening of corridors, selection of a corridor for a starter segment, and technical assessment of transit alternatives within the selected corridor.

Selection of the South Bay corridor came in the early stages of the Phase II study. In the analysis leading to the selection of the corridor, the MTDB considered environmental, social, and economic impacts; station location studies; and cost and patronage estimates. The dominant considerations for the selection were low cost and high prospective ridership.

Ultimately, the major factor that led to the selected project alignment was the availability of the SD&AE Railway. On September 10, 1976, a severe storm passed through the eastern part of San Diego County washing out major portions of the SD&AE Railway. In 1978, the Interstate Commerce Commission (ICC) denied a request to abandon rail service on the line. Because of these events, MTDB was able to purchase the entire 108-mile railroad for $18.1 million.

The project approval process was initiated in June, 1978, when the MTD Board of Directors made a determination that the Trolley project in the South Bay corridor was feasible. The San Diego City Council approved the project and an areawide transit financial plan in October, 1978. In March, 1979, MTDB received final project and financial plan approval from the California Department of Transportation (CALTRANS) and the California Transportation Commission. The first construction contract was awarded in December, 1979, the first vehicles arrived in August, 1980, and revenue service began in July, 1981.

STUDY AREA DESCRIPTION

The study area includes Centre City San Diego on the north, and extends to the Mexican Border to the south. This corridor includes major existing employment centers, suburban residential areas and a significant amount of agricultural land. The study area is shown on Figure 2.

Existing Travel Characteristics

Of the 8.3 million person-trips in the region each day, 1.2 million, or 14.5%, occur within the Trolley corridor. Within the corridor, approximately 3.6% of all trips are on transit, twice the mode split of the region. Table 4 summarizes the major characteristics:

TABLE 4

1980 TRAVEL CHARACTERISTICS

	TRANSIT TRIPS		AUTO TRIPS
	Region	Corridor	Regional
Daily Trips	145,500	40,100	8,000,000
Average Trip Length (Miles)	5.2	5.2	7.1
Average Trip Length (Minutes)	19.2	17.3	9.3
Percent of Trip in AM Peak	22%	22%	8%

SOURCE: 1980 Regional Transportation Plan.

The freeway system in the San Diego region is probably the finest in the country. Of a total of 272 miles of freeway in the region, 25.8 miles are located within the corridor. There is no severe congestion in the corridor and only one area of moderate congestion caused by a narrowing of the freeway to cross the Sweetwater River.

The characteristics of transit riders in the South Bay is not significantly different from the region as a whole. Ridership reflects the demographic characteristics in the area, the large military population and the area's proximity to Mexico. Table 5 shows the characteristics of transit riders in the corridor and region. In addition, rider characteristics on the three transit routes which parallel the Trolley are also shown.

TABLE 5

TRANSIT RIDERSHIP CHARACTERISTICS

	Region	Trolley Corridor	Transit Routes		
			29	32	100
Percent Female	51.3%	53.2%	29.2%	48.8%	41.9%
Median Age	33.1	28.9	24.7	35.4	29.6
Median Income (000)	$9.9	$9.9	$10.2	$8.6	$12.4
Ethnicity: % Hispanic	18.0%	18.8%	12.2%	56.7%	14.6%
% White	60.3%	58.5%	52.4%	30.0%	68.8%
% Transit Dependent	45.5%	46.2%	49.9%	44.3%	40.5%

SOURCE: SANDAG 1981 Transit Ridership Survey (unpublished).

International Border Characteristics

Almost three million people live in the combined San Diego/Tijuana area, which is one of the fastest growing areas in the world. On a typical weekend day, over 40,000 persons cross the border from Mexico. The following information is based on a non-expanded border crossing survey conducted in 1980.

San Diego County residents account for 38.7% of those people surveyed. A total of 31.4% of the sample were residents of Tijuana and an additional 3.1% were residents from other parts of Mexico.

Although the automobile is the most common access mode to the border, transit carried 12% of border crossing trips. In contrast, less than 2% of the trips in the region are made by transit.

Existing Land Use

The light rail corridor impact area covers 38 square miles, or over 24,000 acres. Table 6 summarizes the land uses in the corridor. The primary land use is residential (31.2%), followed by agriculture (13.3%) and manufacturing (12.7%). Because the study area is skewed to take in a large part of Otay Mesa, which is largely undeveloped, agriculture may seem to account for a disproportionately large share of the corridor land use. However, a significant amount of agricultural land is in close proximity to the Trolley alignment.

Commercial land uses, which include both shopping center and strip commercial, make up 9.4% of the area. The balance of the land uses include: federal reservations (11.9%), transportation and utility corridors (11.6%), public and quasi-public (4.4%), water areas (2.7%), wildlands (1.5%), and open space (1.3%).

TABLE 6

1980 LAND USE

Land Use	Total Acres	% of Total
Residential	7,550.65	31.2%
Agricultural	3,238.44	13.3%
Manufacturing	3,092.48	12.7%
Federal Reservations	2,887.92	11.9%
Transportation and Utilities	2,810.01	11.6%
Commercial	2,282.28	9.4%
Public and Quasi-Public	1,078.80	4.4%
Water Areas	627.31	2.7%
Wildlands	260.09	1.5%
Recreational and Open Space	318.27	1.3%
Total	24,276.25	100.0%

SOURCE: SANDAG 1980 Land Use Inventory.

Specific land use, zoning and general plan designations in the area of the stations have also been collected and mapped.

The opportunity exists throughout the corridor for increases in land use intensity within the Trolley impact area. MTDB, with the cooperation of local jurisdictions, will be pursuing these development opportunities, including potential joint development of station sites over the next few years. This monitoring study will specifically record changes in land use, zoning, general plans, housing values, and population within the study area.

Employment

Employment figures listed below are based on the 1978 regional data base developed by SANDAG. A 1980 employment estimate base is currently being finalized. Over 20% of the civilian work force is employed in the study area. Table 7 shows that the largest concentration of employees is located in the Centre City area. The second largest employment center is in Barrio Logan immediately south of Centre City.

TABLE 7

TOTAL EMPLOYMENT
(1978 Estimate)

Community	Number	Percent of Total	
		Study Area	San Diego Region
Centre City	55,023	35.5	7.5
Barrio Logan	42,920	27.7	5.9
National City	21,875	14.1	3.0
Chula Vista	16,774	10.8	2.3
Otay	5,943	3.8	0.8
Palm City/Nestor	1,672	1.1	0.2
San Ysidro	5,261	3.4	0.7
Imperial Beach	5,673	3.6	0.8
Total	155,141	100.0	21.2

SOURCE: SANDAG, 1978 Estimates.

The major categories of employment in the study area are: military, other governmental employment, and manufacturing. Table 8 shows that 18.8% of those employed are in the military. Local governments and retail trade both employ 12% of the workers. Military employment is heavily concentrated in Barrio Logan and National City. Manufacturing employment is concentrated in Barrio Logan and at a single Chula Vista industry, which is located within walking distance of a light rail station.

TABLE 8

EMPLOYMENT
BY STANDARD INDUSTRIAL
CLASSIFICATION (SIC)
1980

(Percent of Total)

SIC	Centre City	Total Light Rail Corridor	Region
Agriculture & Mining	0.6	1.0	2.0
Construction	1.5	2.3	5.3
Manufacturing	6.4	15.5	11.5
Transportation, Utilities	8.5	5.2	3.6
Wholesale Trade	6.3	4.9	3.0
Retail Trade	12.9	12.1	16.3
Finance, Insurance, Real Estate	15.9	7.3	4.9
Services	23.6	14.2	18.0
Government:			
Federal, Civilian	5.9	5.9	5.6
Military	1.1	18.8	16.8
State	1.4	0.8	2.5
Local	15.9	12.0	10.5
Total:	100.0	100.0	100.0

SOURCE: SANDAG Series 5 Data Base.

Social Characteristics

The 188,940 people living in the study area occupy 66,700 housing units. More than 50% of these are single-family dwellings. The average household size in the study area is 2.8 persons, which is the same as the regional average.

Females comprise a lower percentage (48.0%) of the population in the corridor, than in the region as a whole (49.1). This reflects the high military presence in the area. The study area has a slightly higher incidence of transportation-handicapped persons than the region as a whole.

Residents of the study area tend to be younger than the population of San Diego County. More than 48% of the study area is under 25 years old, as shown in Table 9. Within San Diego County, less than 43% of the residents fall into this age bracket.

TABLE 9

AGE DISTRIBUTION
(1980)

Age	LRT Study Area	Region
0-4	9.4	6.9
5-17	20.7	18.6
18-24	18.5	16.9
25-59	39.6	43.2
60-64	3.4	4.1
Over 64	8.4	10.3

SOURCE: 1980 Census

In 1980, the estimated median household income was $14,129 for the San Diego region. Within the study area only the Palm City/Nestor area had a median household income close to the regional median. Centre City and Barrio Logan report the lowest median household incomes in the study area, as shown in Table 10. Income information will be updated with Census data when it becomes available.

TABLE 10

MEDIAN HOUSEHOLD INCOME
(1980 Estimate)

Jurisdiction	Income
San Diego Region	$14,129
Centre City	4,102
Barrio Logan	6,515
National City	9,883
Chula Vista	11,623
Otay	11,253
Palm City/Nestor	13,535
San Ysidro	6,548
Imperial Beach	11,263

SOURCE: SANDAG Series 5 Data Base.

A total of 81.3% of the residents of San Diego County are White, compared to only 64% of the study area population. Table 11 shows that almost one-fifth of the residents of the study area identified themselves as "Other". An additional 9.3% reported an Asian background. Hispanics comprise 41.3% of the total population in the study area, compared to less than 15% regionwide. Racial and ethnic distribution varies considerably among the study area communities.

TABLE 11

RACE AND ETHNICITY
(In Total Percentage)
(1980)

	LRT Study Area	San Diego County
White	64.8	81.3
Other	18.9	7.5
Asian	9.1	4.8
Black	6.6	5.6
Indian	0.6	0.8
Hispanic Ethnicity	39.9	14.8

SOURCE: 1980 Census

Table 12 shows that within the study area, the median housing prices in 1980 range from $39,570 in Barrio Logan to $79,066 in Chula Vista. The regional average was $104,205 for a single-family home. Thus, the median housing costs in the study corridor were significantly lower than the regional ave...

TABLE 12

AVERAGE SALE PRICE
SINGLE FAMILY DWELLINGS

Year to Date, June 1980	
Barrio Logan	$ 39,570
National City	56,862
Chula Vista	79,066
Otay	61,497
South San Diego	65,888
Imperial Beach	71,454
San Diego Region	104,205

SOURCE: San Diego Chamber of Commerce,
Economic Research Bureau.

CONSTRUCTION AND OPERATIONAL IMPACTS

Two additional activities were carried out to determine the effects of Trolley construction on adjacent businesses and to monitor land use or economic impacts once the Trolley began operation. The first activity, a survey of businesses along the Trolley route, was conducted in 1980 and will be repeated in the third year of the project. The second activity is a periodic inventory of vacant land, vacant buildings and private construction or redevelopment activity.

When the business survey was conducted, construction had begun only on 12th Street. Along this street, over 60% of the businesses had experienced a decrease in sales or service activity; approximately 4% had experienced an increase. Over 40% of the merchants along the route where construction had not yet begun anticipated a decrease in sales during the construction period.

Most of the merchants surveyed felt that there would be no change in the level of their business activity due to Trolley operations. However, 14% of the 12th Street business operators and 46% of the operators in other areas felt there would be an increase in their business activity because of Trolley operations.

LIGHT RAIL MONITORING ACTIVITIES

This study effort, which is designed to monitor short-range impacts, is divided into three phases. The first phase is the subject of this report.

Phase I: Study Area Inventory (1980-81)

This first phase was designed to capture a picture of a moment in time of the study area prior to implementation of the San Diego Trolley. Land use, travel, and socioeconomic data was gathered, as well as information on the early effects of system construction.

Phase II: Initial Operating Stage (1981-82)

The second phase is intended to monitor incremental changes in the study area during its first year of Trolley operation.

Phase III: Impact Evaluation (1982-83)

The final phase of the study will update the data collected in Phase I, followed by an evaluation of the impacts of light rail construction and operation.

In formulating this monitoring program, the decision was made to undertake two major activities in Phase I. Phase I undertook to consolidate all available data on the South Bay corridor to document conditions prior to Trolley operation. More importantly, however, Phase I defined the specific items which will be monitored and compared in subsequent phases of this study. Table 13 lists the specific data items which will be monitored to determine the short-range impacts of the Trolley through its first two years of operation.

TABLE 13

SHORT-TERM MONITORING ITEMS
PHASES I AND III

TRANSIT

Ridership; by route and operator
Route loadings; for all routes, by time of day
Passenger boardings and alightings; by major stops/stations
Passenger transfers; by route
*Passenger profiles (Routes 29, 32, Trolley in FY83)
*Border crossings; transit use and trip purpose
Intercity bus; service changes (passenger data is not available)

AUTOMOBILE AND PEDESTRIAN TRAVEL

Traffic Counts
Vehicle Occupancy
Turning movements
Time delay study (12th and 'C' Streets)
Travel time study
Queuing counts
Accidents
On-street parking in station areas
Parking lot use: automobiles, park-and-ride, bicycles
Pedestrian counts
Commute mode survey

LAND USE AND ECONOMIC

General Plan changes
Zoning changes
New construction
Land use changes
Business turnover
*Business survey (sales & employment)
Real estate sales and values

*Survey activity

The overall objective of this monitoring effort is to document the changes which will occur in the South Bay corridor following the implementation of the Trolley. To the extent feasible, the changes which can be attributed to the Trolley will be separated from the general impacts of growth and change in South Bay. This information will be used in planning and implementing future extensions of the San Diego Trolley. It will also be of value to other regions in their consideration of the light rail transit option.

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CHAPTER 2
SAN DIEGO TROLLEY PROJECT

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San Diego Trolley Project

Following an 18-month analysis of transit alternatives, the MTD Board of Directors made a determination that the San Diego Trolley was a feasible project in June 1978. Final design engineering was initiated in January 1979, the first construction contracts were awarded in December 1979, and revenue service was initiated in July 1981.

PLANNING AND APPROVAL

The San Diego Metropolitan Transit Development Board (MTDB) was created in 1975. California Senate Bill 101, the legislation creating MTDB, directed that the planning and design of exclusive mass transit guideways be pragmatic, low cost, and incremental in nature. Based on this direction, principles were adopted by the Board at the initiation of the Guideway Planning Project, which provided direction for conduct of the project study. These principles, adopted on December 27, 1976, are as follows:

- The selected corridor should extend a long distance and offer high speed operation.
- The guideway system capital cost should be low.
- The guideway system should be primarily at-grade and primarily within exclusive right-of-way.
- The transit system operating costs should be low, and the guideway system should attempt to meet operating costs out of fares (although this is not a prerequisite for system feasibility).
- The project should measure the impact of the proposed transit system on residential growth.

The feasibility determination came at the conclusion of the 18-month Guideway Planning Project. This project was conducted in two phases. Phase 1 was initiated in December 1976 and involved evaluation of candidate corridors based on the Regional Transportation Plan, subsequent technical studies, and policy guidance by the MTD Board of Directors. Phase 2 began in April 1977 and involved further screening of corridors, selection of a corridor for a starter guideway segment, and a technical assessment of transit alternatives within the selected corridor. Several project objectives were considered in evaluating the transit alternatives, including:

- Making better use of existing transportation facilities.
- Using existing financial resources more productively.
- Providing an effective alternative to the automobile.
- Improving the attractiveness of public transportation.
- Making public transportation accessible to all.
- Making a positive contribution to the quality of life.

The purpose of the Guideway Planning Project was to determine guideway feasibility and select a corridor alignment which would represent an initial guideway element of an overall public transit improvement program. Selection of the South Bay corridor came in the early stages of the Phase 2 study. In the analysis leading to the selection of the corridor limits, a broad array of planning and engineering data was assembled. Included were analyses of available guideway alignments within the corridors, probable environmental, social and economic impacts, station location studies, and order-of-magnitude cost and patronage estimates. The dominant considerations for the selection were low cost, high prospective ridership, and minimal environmental impact.

Ultimately, the major factor that led to the selected project alignment was the availability of the San Diego & Arizona Eastern (SD&AE) Railway. On September 10, 1976, a severe storm passed through the east part of San Diego County washing out major portions of the SD&AE Railway between Division and Plaster City. In 1978, the Interstate Commerce Commission (ICC) denied the parent company's request from Southern Pacific Transportation Company to abandon rail service on the line. MTDB then negotiated a purchase price for the railroad of $18.1 million, and the ICC approved sale in October 1979. Actual purchase took place November 1, 1979.

The project approval process was initiated in June 1978, when the MTD Board of Directors made a determination that the Trolley project in the South Bay corridor was a feasible project. Unfortunately, this action coincided with the passage of State of California Proposition 13 (Property Tax Initiative) which slowed the approval process. The San Diego City Council finally approved the project and an areawide transit financial plan in October 1978. In March 1979, MTDB received final project and financial plan approval from CALTRANS and the California Transportation Commission.

SYSTEM CHARACTERISTICS

The Trolley was designed to use a combination of exclusive right-of-way and mixed street operation. The Trolley travels a total of 15.9 miles (25.3 KM) through central San Diego, National City, Chula Vista, Otay, and south San Diego (see Figure 3).

The majority of the system operates on the existing rehabilitated rail facilities of the SD&AE Railway. The main line of the SD&AE Railway extends along the east side of Interstate 5 and Harbor Drive from the International Border at San Ysidro to just south of San Diego Centre City at Commercial Street.

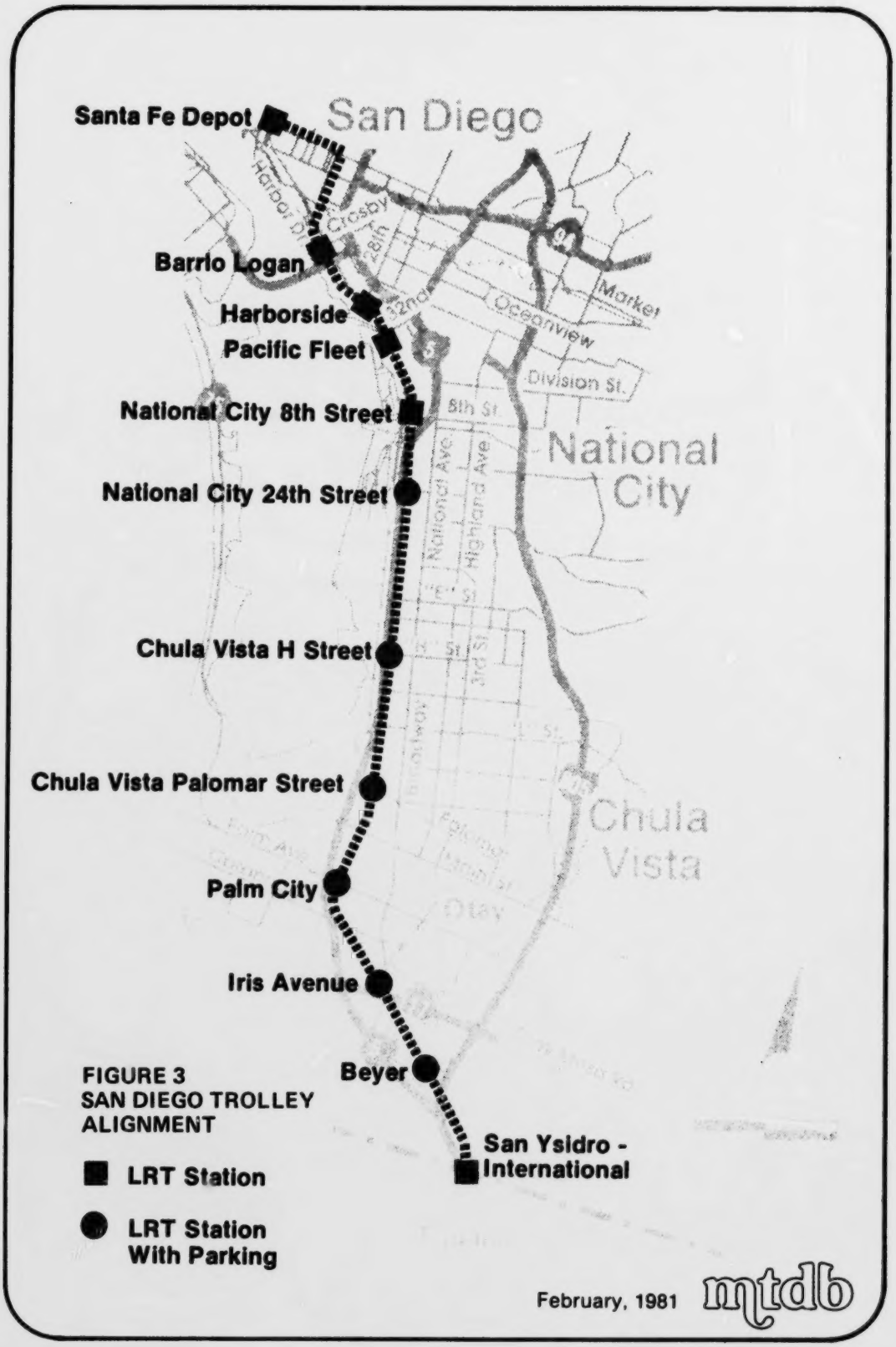

FIGURE 3
SAN DIEGO TROLLEY ALIGNMENT

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Because the SD&AE Railway was built as a single track system designed for freight operations only, light rail transit operations required that the existing track and roadbed be upgraded. All grade crossings are protected by automatic crossing gates. Although service was initiated as a single track operation, a double track system will be operating a year after transit service begins.

The guideway operates on existing streets for a distance of 1.7 miles (2.7 KM) in Centre City. The LRT vehicles travel at-grade on an exclusive, reserved path essentially in the center of the street. Eventually, C Street from Kettner Boulevard to 10th Avenue will be developed as a pedestrian and transit way. However, during the initial phase of the guideway operations, automobile traffic is permitted on C Street. Preferential signalization is used to minimize interference with auto traffic at intersections.

The light rail transit system is designed to provide for intra-community transit as well as connections between communities. The stations are spaced to offer high accessibility to the guideway by maximizing access for pedestrians, cyclists, local transit users, and motorists. In Centre City San Diego, the train stops four times along C Street and three times along 12th Avenue. There are eleven suburban stations.

Major bus transfer facilities are provided at three suburban stations and parking is available at six of the eleven suburban stations. Approximately 2,000 free parking spaces are distributed among the stations. All stations have pedestrian and/or bus access. Bicycle storage facilities are also provided.

In Centre City, the LRT stops in zones protected from bypassing traffic. The Centre City Trolley stops shown in Figure 4 are:

- Santa Fe Depot, near the intersection of Kettner Street and C Street.
- Civic Theatre, between 2nd Avenue and 3rd Avenue on C Street.
- Gaslamp, between 5th Avenue and 6th Avenue on C Street.
- San Diego Square, between 7th Avenue and 8th Avenue on C Street.
- City College, at the intersection of 12th Avenue and C Street.
- Market Street, Southbound - on 12th Avenue between Market Street and G Street; Northbound - on 12th Avenue between Island Avenue and Market Street.
- Imperial, at the intersection of Imperial Avenue and 13th Street.

The eleven suburban stations are shown in Figure 3 and described below:

- Barrio Logan, located at Crosby Street and Harbor Drive. Bus transfers can be made to Coronado and Southeast San Diego.

- Harborside, at 28th Street and Harbor Drive, serves National Steel and Shipbuilding and other industrial sites.

- Pacific Fleet, at 32nd Street and Harbor Drive, serves 32nd Street Naval Base.

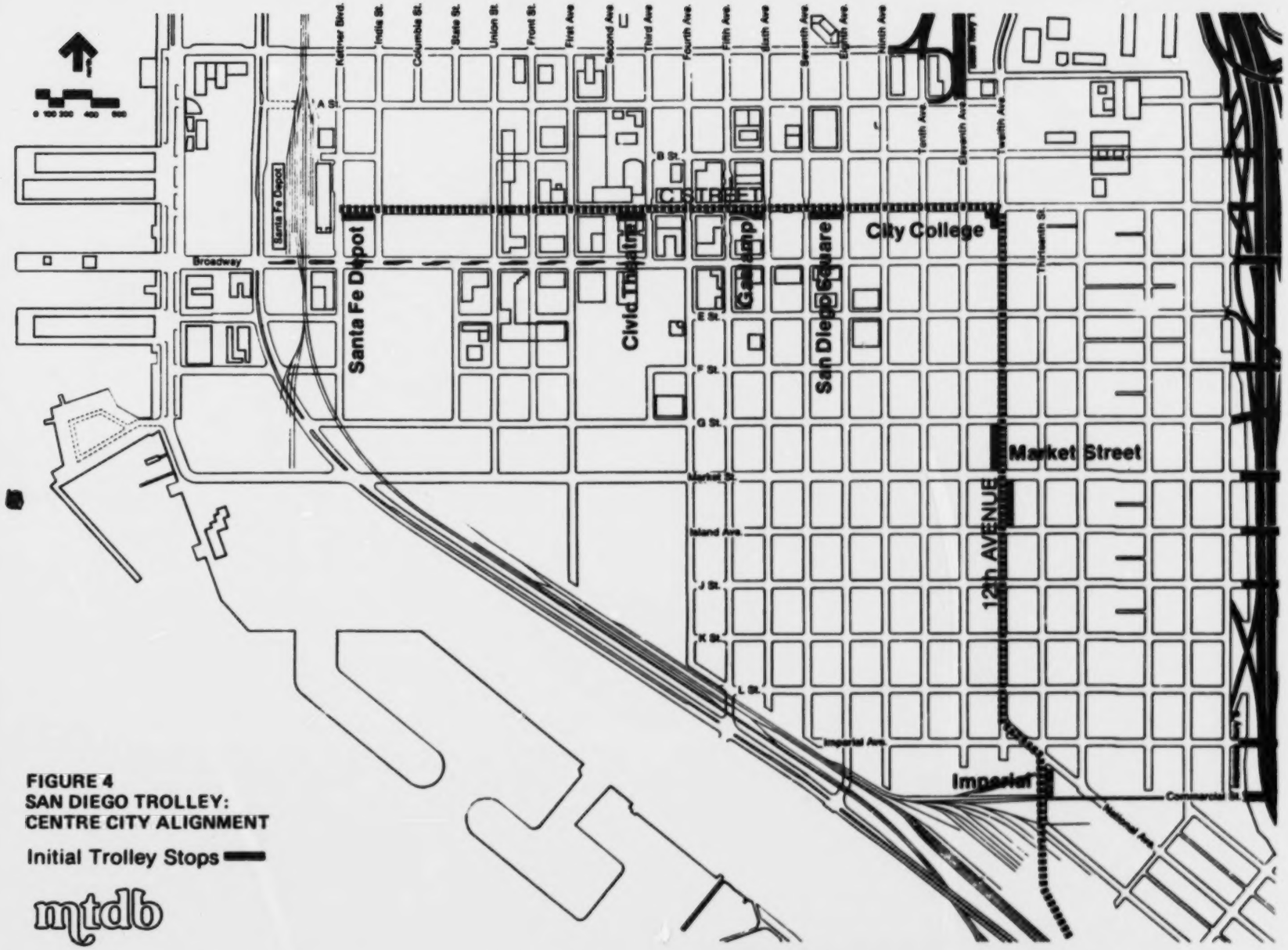

FIGURE 4
SAN DIEGO TROLLEY:
CENTRE CITY ALIGNMENT

Initial Trolley Stops ▬

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- National City 8th Street, on 8th Street near Harbor Drive, serves 32nd Street Naval Base and North National City. Bus transfers to National City.

- National City 24th Street, on Wilson Avenue near 24th Street, serves residential, commercial and industrial areas of National City. The station provides direct access to State highway Route 54, Bonita, and communities within the Sweetwater River area. There are 180 parking spaces available and a bus storage area for nine (9) vehicles.

- Chula Vista H Street, on H Street near Interstate 5, serves the central business district and northern neighborhoods of Chula Vista. The station provides direct access to Rohr Industries and Chula Vista Shopping Center. Bus transfers to Chula Vista, including Southwestern College can be made. There is parking for 300 automobiles and a 7-bay bus transfer facility.

- Chula Vista Palomar Street, on Palomar Street at Industrial Boulevard, serves Otay, southern Chula Vista, and Castle Park. There are 370 parking spaces at the station and a 7-bay bus transfer facility.

- Palm City, located on Palm Avenue at Hollister Street, serving Imperial Beach, Palm City, and Nestor. Local bus transfers to Imperial Beach and Coronado. The Palm City station has the largest parking lot on the line with 470 spaces.

- Iris Avenue, on Iris Avenue at Howard Avenue near Highway 117, serves the rapidly growing residential and industrial community of South San Diego. Local bus service is available. There is parking for 330 automobiles at this station and a 4-bay bus transfer facility.

- Beyer, located between Seaward Avenue and Beyer Boulevard, serves the San Ysidro community. Local buses serve the community. There are 170 parking spaces at this station.

- San Ysidro-International Border, located directly north of the International Border on San Ysidro Boulevard serves travelers crossing the border, as well as the local community. Local bus service is available.

Guideway stations are modest, low level platforms with a waiting shelter, benches, and light standards. Transit schedule and fare information are provided on large, easy-to-read graphics. Transit system regulations are posted in conspicuous locations. Public telephones and trash receptacles are provided.

The design of the stations gives special attention to the needs of people with low mobility. The entire light rail transit system has been designed to be accessible to elderly and handicapped passengers.

A fleet of 14 articulated light rail (LRT) vehicles are used to provide transit service. Each car can carry 200 passengers and trains of two

or three cars are normally used. The Duwag U2 LRT vehicles are a proven standard design. The vehicles are electrically powered, receiving a current from overhead catenary or wires by means of a pantograph. This is a distinguishing feature of a light rail vehicle. Approximately eleven transformer substations are transmitting 600 volts of direct current power.

The LRT system uses a self-service, barrier-free, fare collection method. Self-service ticketing machines are located at each station and can be used by the passengers to purchase a single-ride ticket or validate a multi-ride ticket. No fare payment or ticket collection is made aboard the LRT vehicle. However, passengers are subject to inspections by roving transit personnel to assure they have a valid proof of payment. This technique speeds service since passengers may board through all doors and drivers are not required to supervise fare collections.

In addition to the single and multi-ride tickets, proof of payment can also be shown by a valid monthly transit pass or transfer from a connecting bus.

SYSTEM OPERATIONS

The Trolley operates seven days per week. Trains are currently scheduled at 20-minute headways between 5:00 AM and 9:45 PM. Eventually, the guideway will also operate between 10:00 PM and 1:00 AM at 30-minute headways.

The time required to travel between Centre City San Diego and the International Border is approximately 42 minutes. The overall average system speed through Centre City is nine miles per hour. Along the railway portion of the right-of-way the trains average 25-30 miles per hour. Numerous efforts to minimize operational conflicts are incorporated into the guideway system. The running time from end to end is approxiamtely twice as fast as the previous bus service. Overall system speed will increase to 35-38 MPH when double-tracking is complete, or approximately 36 minutes travel time from the border to the Santa Fe depot.

The light rail transit system is a community collector and distribution system. The guideway system distributes passengers to local transit routes. Currently, bus service in the Study Area is provided by San Diego Transit Corporation, National City Transit Corporation, Chula Vista Transit Corporation, and the Strand Express. Existing bus service was restructured to produce an integrated transit network in the study area, as shown in Figure 5.

MTDB's light rail line is designed to operate as an integral part of the areawide transit system. LRT users are permitted transfer privileges between other transit services in the area. A common monthly pass is also available as a user service.

On April 20, 1981, the MTD Board adopted the initial Trolley fare structure, as shown in Table 14.

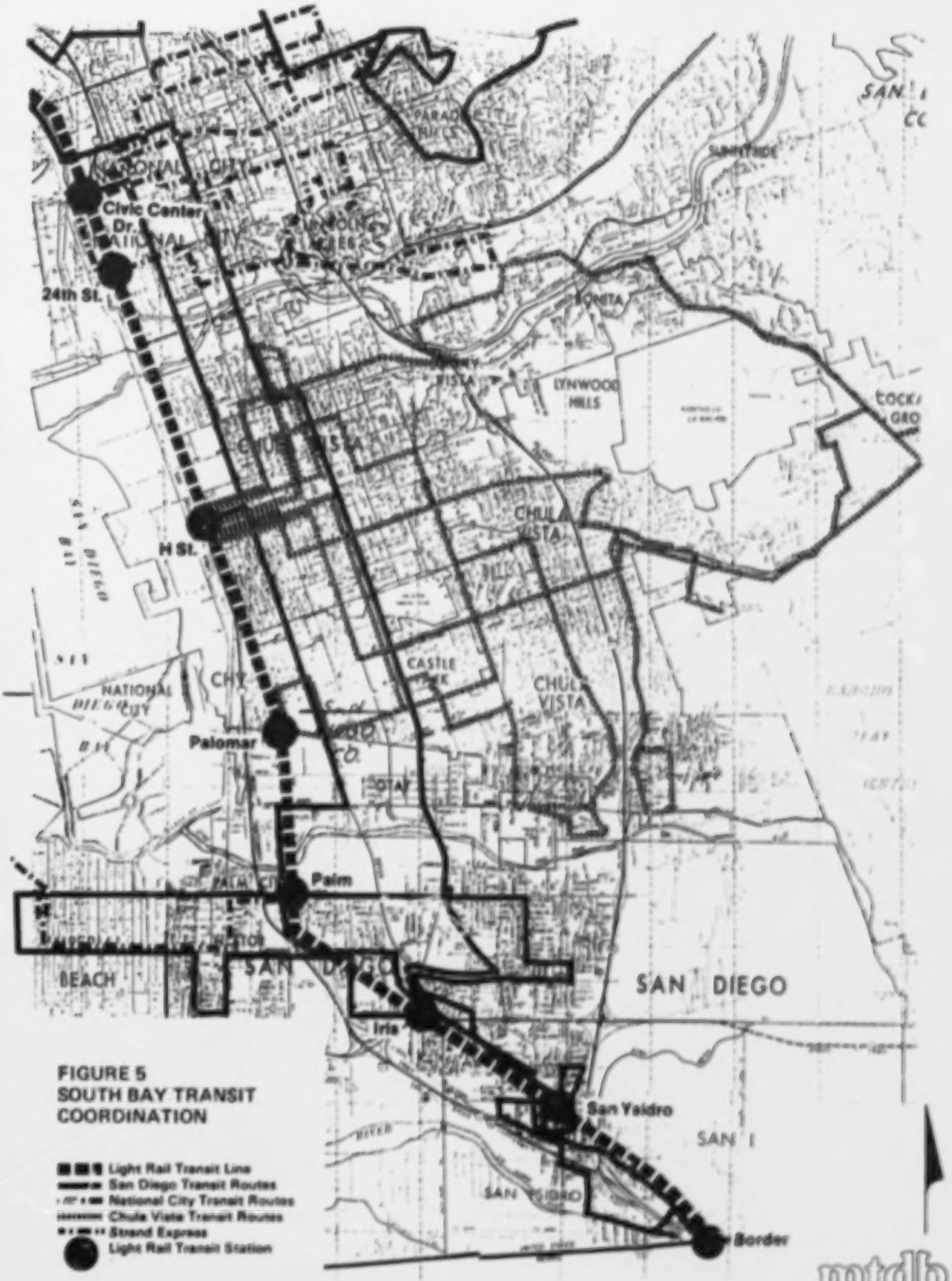

FIGURE 5
SOUTH BAY TRANSIT COORDINATION

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TABLE 14

1981 TROLLEY FARES

One Way Fare	$ 1.00
One Way Elderly and Handicapped	.40
Reduced Downtown Area Fare	.25
"Ready Ten" - Ten Trip Ticket	7.50
Regional Monthly Pass	31.00
Regional Monthly Elderly & Handicapped Pass	15.50
Transfer Charge from LOCAL or URBAN Services	.20
Transfer Charge from METRO (Express) Services	Free
Transfer Charge for Elderly and Handicapped	Free

FORECASTED PATRONAGE

The actual characteristics of patronage movements on the guideway are subject to numerous factors including the type and level of feeder bus services, guideway linkage to other express transit corridors, guideway service levels, and International Border crossing travel demands. Total guideway patronage forecasts range from 28,000 to 30,000 daily in 1995. The seven Centre City stops represent a major portion of guideway activity, ranging from 50%-68% of the daily patronage.

The trip purpose distribution of forecasted guideway ridership reveals that home-work trips predominate over other trip types, representing 37% to 42% of all guideway usage (excluding border crossings). Prior to Trolley service, approximately 15% of the border crossing travelers using San Diego Transit were destined to a work location, with shopping the primary border crossing activity.

Peak hour guideway patronage is expected to represent approximately 10% of the daily usage. As most other rail systems in the United States experience much higher peaking characteristics (15.0 to 20.0% peak hour versus all-day), this relatively low peak hour demand reflects the flat all-day distribution of border crossing travel (7.0% peak hour versus all-day).

COSTS AND FUNDING

The light rail project is being developed in two phases. The original Phase 1 project included all those activities required to implement a 15.9-mile single track LRT system utilizing 14 light rail vehicles. Phase 2, which is scheduled for completion in December, 1982, involves the complete double-tracking of the LRT line, additional traction power equipment, and the purchase of 10 additional vehicles.

TABLE 15

SAN DIEGO TROLLEY CONSTRUCTION COSTS

PHASE 1	
Vehicles (14)	$ 12,000,000
Construction & Other Procurement Contracts	35,300,000
SD&AE Purchases	18,100,000
Non-SD&AE Right-of-Way	4,000,000
Engineering & Construction Management	7,000,000
Interest on Fund Advances	9,000,000
Start-Up Activities	700,000
Phase 1: TOTAL	$ 86,000,000
PHASE 2	
Double-Tracking	$ 23,300,000
Additional Traction Power	3,100,000
Vehicle Purchases (10)	9,600,000
Phase 2: TOTAL	$ 36,000,000
GRAND TOTAL:	$122,000,000

Guideway operating costs are estimated to be $3.7 million per year in 1981 dollars. Approximately 62% of this budget will go towards labor costs, as shown in Table 16.

TABLE 16

SAN DIEGO TROLLEY OPERATING BUDGET
FY82 PROJECTION

Item	Projected Cost
Personnel	$1,700,000
Contractural Services*	753,000
Materials & Supplies	225,000
Utilities	607,000
Casualty & Liability Costs	300,000
Administrative Expenses	90,000
Leases & Rentals	25,000
TOTAL	$3,700,000

*Includes the following services: track maintenance, ticket inspection, system security, revenue collection, informational service, vehicle interior maintenance, contract bus services.

The financial plan for the light rail system indicates that 87.5% of the capital expenditures for Phase 1 was derived from MTDB's State Constitutional Amendment (SCA 15) account. SCA 15 sets aside a portion of California's state gas tax for guideway development. In FY80, this funding source produced slightly over $10 million. The remainder of Phase 1 funding was obtained from Transportation Development Act (TDA) monies. TDA monies result from 0.25% state sales tax proceeds.

The Phase 2 project is funded with California SB 620 Transit Guideway Program monies. These are state sales tax monies which have been transferred to the State Transportation Planning and Development Account to be used for transit purposes.

RAIL FREIGHT OPERATIONS

When the petition to abandon service on the SD&AE Railway was filed, MTDB embarked on a study to determine the feasibility of retaining rail freight operations through public ownership and possible joint use by freight and transit. When it became apparent that there existed a good possibility that such joint use was feasible, the MTDB requested and obtained a ruling from the State Transportation Board permitting acquisition of the SD&AE right-of-way.

There are three segments of the SD&AE located within the San Diego metropolitan area -- the Mainline, the La Mesa branch, and the Coronado branch. The Mainline is that portion extending from the International Border at San Ysidro to just south of Centre City San Diego which has been rehabilitated and electrified for passenger use. The La Mesa branch extends 15.5 miles from the intersection with the Mainline south of Centre City to the City of El Cajon. The Coronado branch extends along the west side of Interstate 5 from National City to Imperial Beach.

At the International Border, the tracks enter Mexico. The SD&AE Transportation Company, a private operator under contract to MTDB to operate the freight service, has an agreement with the Ferrocarril Sonora Baja California to operate over 44 miles of their tracks. The railroad re-enters the United States in eastern San Diego County and extends to Plaster City in Imperial County.

In the process of rehabilitating the Mainline and constructing light rail facilities, provisions were made to facilitate freight service. This was accomplished by extending freight leads to accommodate clusters of shippers off the Mainline, providing a series of ladder tracks to sort and store cars crossing the International Border, and building a freight maintenance facility just north of the International Border. Complete double tracking of the Mainline, although primarily to improve operating efficiencies of the LRT service, will also simplify joint transit/freight operations.

There will be one Mainline freight operating daily between Imperial County and San Diego County. There is also a daily local switching movement, working trackage along the Mainline, as well as the Coronado

branch. In addition, a daily local freight operates along the La Mesa branch between San Diego and El Cajon.

A record of carload trends between May 1980 and February 1981 is shown in Table 17. Although the storm-damaged portion of the railroad has been restored in east San Diego County and Imperial County, through routing between Imperial and San Diego Counties has not been restored due to two, more recent, railroad bridge washouts in Tijuana, Mexico. Carload shipments should increase when through routing is restored.

TABLE 17

FREIGHT CARLOAD TRENDS
SD&AE RAILROAD

	2/81	1/81	11/80	10/80	9/80	8/80	6/80	5/80
Switch Revenue Only	72	72	59	78	65	75	69	78
Mexico to Mexico	323	278	248	288	191	107	33	66
To the Port and A.T.S.F.	406	545	531	141	216	520	753	670*
Other	320	857	553	353	337	293	359	—
TOTAL CARS:	1,121	1,752	1,491	880	809	995	1,214	

*Line Haul Revenue, Loss of Service due to Mexican Bridge damage.

CHAPTER 3
PUBLIC TRANSPORTATION

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Public Transportation

This chapter documents existing transit and paratransit facilities, service and travel in the corridor which existed prior to Trolley service. Where possible, travel in the study area is contrasted with travel in the region as a whole. Much of the information comes from on-going surveillance efforts of the San Diego Association of Governments. Additional information was gathered through special surveys or counts.

FIXED ROUTE TRANSIT

Existing Service

Four of the region's six fixed route transit operators provide service in the study. San Diego Transit Corporation (SDTC), National City Transit (NCT), Chula Vista Transit (CVT), and the Strand Express Agency (SEA) operate a total of 18 routes within the study area as shown in Table 18 and Figure 6. Together, these operators provide 685.5 line miles of transit service. A total of 124.7 line miles or 18.2% of the transit routes are located within the study area. (Countywide, there are 1,318.6 line miles of transit service.)

A description of each route serving the study area is shown in Appendix II. Each description provides route data, including route miles and annual passengers, as well as daily performance data such as passengers per trip and average passenger trip length. This data was collected as part of the Regional Surveillance Program.

One of the most important characteristics which will be monitored in the study will be transfers between bus routes and the Trolley. Pre-Trolley transfer information is provided both in the route descriptions and in the ridership profiles described in a later section of this chapter.

An essential part of the LRT project is the provision of bus feeder service to the Trolley. All South Bay transit routes were restructured to provide convenient transfers between the Trolley and bus services, effective with the initiation of the Trolley service.

Transit Ridership

Nearly 190,000 people, or 10.1% of the County's residents, live in the study area. Yet the study area generates 40,100, or 26.2%, of the

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TABLE 18

FIXED ROUTE TRANSIT OPERATORS
(FY80)

Operator	Year Began	Number of Buses		Number of Routes		Line Miles		Percent Percent
		Systemwide	Study Area	Systemwide	Study Area	Countywide	Study Area	
San Diego Transit	1967	326	45	33	7	573.5	75.5	13.2%
National City Transit	1979	9	9	3*	3	18.8	10.7	56.8%
Chula Vista Transit	1970	12	12	7	7	70.7	32.0	45.3%
Strand Express Agency	1980	4	4	1	1	22.5	6.5	28.7%
TOTAL		351	70	44	18	685.5	124.7	18.2%

*A fourth route provided service only on Sunday, when the other routes were not in service.

SOURCE: 1980 Regional Transportation Improvement Program.

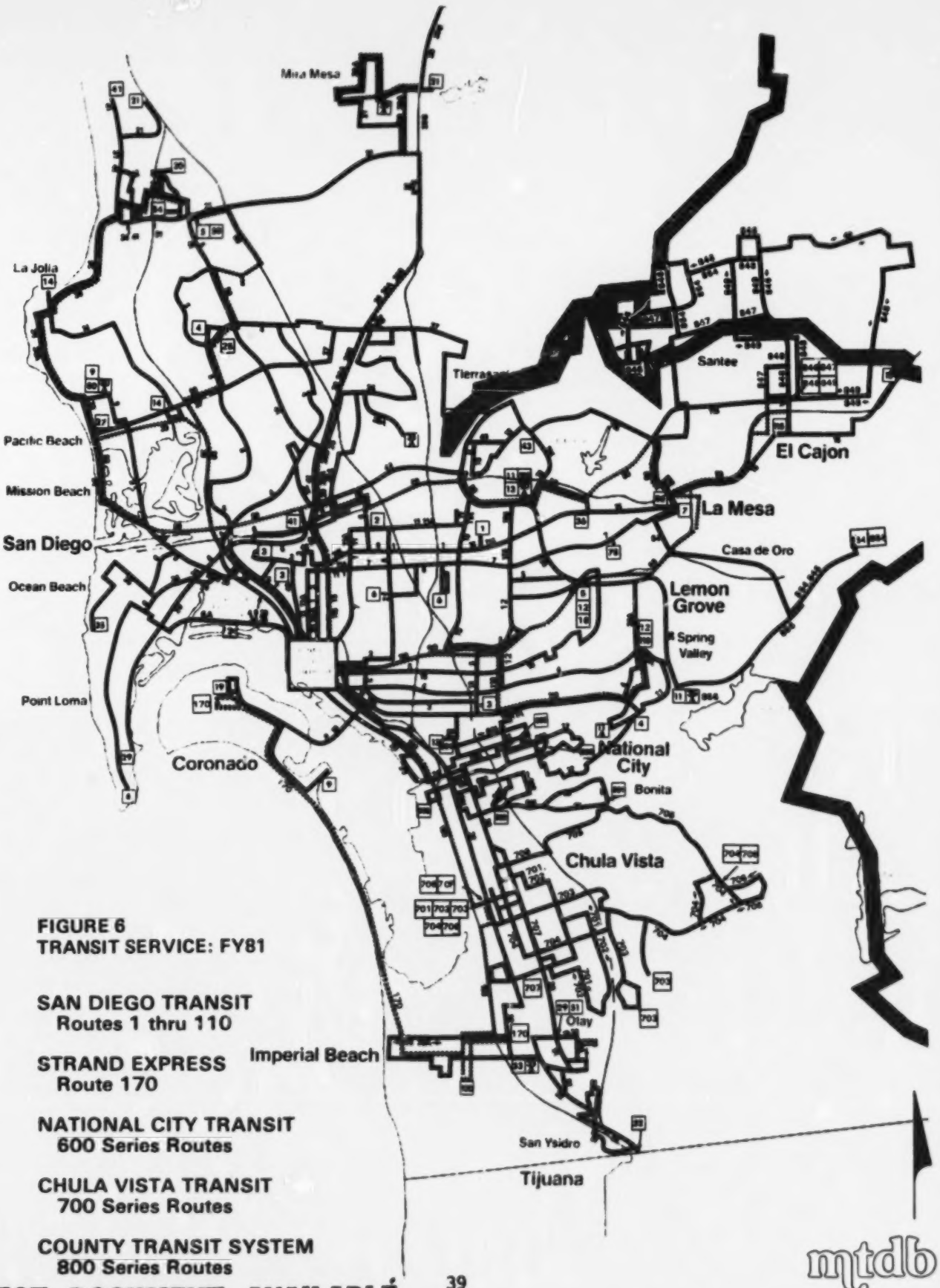

FIGURE 6
TRANSIT SERVICE: FY81

SAN DIEGO TRANSIT
Routes 1 thru 110

STRAND EXPRESS
Route 170

NATIONAL CITY TRANSIT
600 Series Routes

CHULA VISTA TRANSIT
700 Series Routes

COUNTY TRANSIT SYSTEM
800 Series Routes

mtdb

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region's 145,500 daily unlinked transit trips. Major transit generating areas include Centre City, Barrio Logan, and National City.

The SANDAG Passenger Counting Program was developed to provide detailed information on bus stop usage, on-time performance and ridership for the region's fixed route transit service. Passenger Counting Program data for SDT and CVT was collected in late 1979; data for NCT was collected in late 1980. In the future, data for each route will be updated annually.

Table 19 shows that the study area generates 30.3% of regional transit boardings and alightings. Centre City represents 66.5% of the transit passenger counts in the study area. Major transit activity also occurs in Barrio Logan and San Ysidro. Major bus stop locations in the study area are shown in Table 20.

TABLE 19

TRANSIT PASSENGER COUNTS

Community	ONS	OFFS	Total	Percent of Total Study Area	Percent of Total Region
Centre City	28,792	29,387	58,179	66.5%	20.2%
Barrio Logan	4,671	4,546	9,217	10.5	3.2
National City	2,727	2,650	5,377	6.1	1.9
Chula Vista	2,067	2,175	4,242	4.8	1.5
Otay	171	158	329	0.4	0.1
Palm City/Nestor	1,343	1,388	2,731	3.1	0.1
Imperial Beach	338	336	674	0.8	0.2
San Ysidro/Otay Mesa	3,596	3,184	6,780	7.8	2.3
Total	43,705	43,824	87,529	100.0%	30.3%

SOURCE: SANDAG Passenger Counting Program.

TABLE 20

MAJOR BUS STOP LOCATIONS

Street Intersection	Passenger Counts Ons	Offs
CENTRE CITY		
Fourth Avenue & Broadway	6,536	7,036
Fifth Avenue & Broadway	3,224	2,193
Sixth Avenue and Broadway	1,613	2,996
Broadway & First Avenue	1,437	1,747
Broadway & Front Street	1,395	1,654
Broadway & Second Avenue	1,897	1,106
Eleventh Avenue & Broadway	1,184	1,164
Broadway & Tenth Avenue	593	929
Third Avenue & Plaza	424	964
Broadway & Twelfth Avenue	751	633
Broadway & Eighth Avenue	583	703
Fourth Avenue & 'E' Street	984	204
Twelfth Avenue & Market Street	550	557
'E' Street & Fifth Avenue	963	51
BARRIO LOGAN		
Harbor Drive & 32nd Street	837	475
16th Street & Imperial Avenue	393	397
43rd Street & National Avenue	257	238
Sigsbee Street & Logan Avenue	182	188
NATIONAL CITY		
National City Boulevard & 8th Street	557	590
National City Boulevard & 12th Street	205	168
Highland Avenue & Plaza Boulevard	201	170
CHULA VISTA		
Chula Vista Shopping Center	572	702
Broadway & 'I' Street	340	396
Broadway & 'F' Street	144	121
Broadway & 'G' Street	128	109
Broadway & 'E' Street	130	106
OTAY		
Broadway & Naples Street	70	63
Broadway & Moss Street	56	47
Broadway & Arizona Street	45	48
PALM CITY/NESTOR		
Coronado Avenue & 25th Street	719	602
Hollister Street & Palm Avenue	106	123
Coronado Avenue & Madden Avenue	108	111
IMPERIAL BEACH		
Palm Avenue & 9th Street	26	37
First Street & Palm Avenue	34	16
Palm Avenue & 11th Street	29	28
SAN YSIDRO		
International Border, east of I-5	2,168	Ø
International Border, west of I-5	64	1,825
Beyer Boulevard & Palm Avenue	284	342
Beyer Boulevard & Del Sur Boulevard	93	108

SOURCE: SANDAG Passenger Counting Program.

Transit Ridership Profile

The Transit Ridership Survey, conducted during 1980 and 1981, was an on-board origin and destination study used to determine travel patterns and characteristics of people using public transportation in the San Diego region. Surveys were conducted on all SDTC, NCT and CVT routes which operate during weekdays. Because the Strand Express is a relatively new service, data is not available. As shown in Table 21, survey data from the study area is contrasted with data from all routes serving the MTDB jurisdiction. Study area data is tabulated for transit riders with an origin or destination in the light rail corridor, except that riders traveling from outside of the corridor to Centre City are excluded. The same transit ridership profile by individual route is shown in Appendix III.

PARATRANSIT

There are several categories of paratransit service provided in the San Diego Trolley study area. Paratransit services include public dial-a-ride, social service agency transportation service, taxicab service, jitney service, vehicles for hire, and sightseeing vehicles. Each city in the study area, the Port District, and the County has specific operating regulations on paratransit services.

Public Dial-A-Ride

The eight demand-responsive or dial-a-ride systems in the region carry over 500,000 riders per year on 70 vehicles over nearly 1.2 million service miles. San Diego Dial-A-Ride and Handytrans (operated by the City of Chula Vista) are the only operators within the LRT study area. (See Table 22 and Figure 7)

Handytrans provides demand-responsive service to the elderly and handicapped in the Chula Vista and Otay areas. Service is provided eight hours a day, five days a week. All vehicles used are wheelchair accessible. During fiscal year 1980, Handytrans' four vehicles carried 13,000 revenue passengers a total of 41,000 revenue miles. Bus fare is 75 cents.

San Diego Dial-A-Ride uses 12 minibuses and nine wheelchair lift vans to serve the entire city area comprising 320 square miles and an estimated 91,700 elderly and handicapped individuals. Service is provided five days a week from 8:00 AM to 6:00 PM. During FY80, 138,000 passengers were carried a total of 400,000 revenue miles. Wheelchair-bound passengers numbered 56,000. The base fare is 50 cents, with a 25 cent charge for each additional zone. There are 13 zones in the entire city. One zone includes the San Ysidro, Palm City/Nestor area. The central zone includes Centre City and Barrio Logan. Some medical trips are provided through a contract with taxi operators.

Prior to the initiation of Trolley service, no door-to-door service was available in either National City or Imperial Beach. Corridor service was not fully accessible to the disabled and the amount of transferring between the dial-a-rides and regional (inter-community) service, while not specifically known, was determined to be negligible.

TABLE 21

TRANSIT RIDERSHIP PROFILE
(1981)

	MTDB Area	Study Area		
		[illegible]	MCT	CUT
MODE TO BUS STOP				
Transferred	20.5	32.3	44.0	23.7
Walked	67.7	64.0	54.4	73.3
Drove	1.4	1.1	0.3	0.3
Was Driven	2.1	2.4	0.5	2.5
Bicycled	0.2	0.1	0.0	0.2
Dial-a-Ride	0.1	0.1	0.0	0.0
FARE USED FOR THIS TRIP				
Cash	57.2	61.2	52.0	85.1
Transfer Slip	20.4	25.6	39.2	9.3
Transfer Slip and Cash	2.3	2.4	0.3	N/A
Pass	16.1	8.4	6.1	4.2
Pass and Cash	3.0	2.0	2.0	N/A
Single Fare Ticket	1.0	0.4	0.4	N/A
PURPOSE AT ORIGIN OF TRIP				
Home	55.7	52.9	51.0	52.9
Work	19.2	24.2	12.7	11.8
School	9.8	5.8	23.8	26.9
Shopping	3.8	4.5	4.9	4.8
Personal Business	7.6	8.9	6.6	3.6
Social	1.9	1.3	0.5	(1.1)
Other	0.1	0.0	0.1	1.5
Multi-Purpose	0.1	0.1	0.1	0.0
MODE FROM THE BUS STOP				
Transfer	25.5	29.9	29.5	25.0
Walk	72.0	68.5	70.3	N/A
Drive	1.0	0.4	0.0	N/A
Will Be Driven	1.2	1.2	0.2	N/A
Bike	0.2	0.0	0.0	N/A
Dial-a-Ride	0.1	0.0	0.0	N/A
PURPOSE AT THE DESTINATION				
Home	36.3	37.5	47.5	43.1
Work	27.9	30.2	17.0	13.1
School	9.9	6.2	17.8	27.2
Shopping	6.3	6.5	5.4	4.4
Personal Business	13.1	13.8	8.4	4.[illegible]
Social	3.3	3.3	3.4	(3.0)
Other	0.1	0.0	0.0	4.0
Multi-purpose	0.3	0.0	0.0	0.4
NORMAL USE OF TRANSIT				
6-7 Days a Week	32.9	34.2	27.6	56.5
4-5 Days a Week	39.4	35.0	41.4	29.3
1-3 Days a Week	12.9	12.8	14.2	14.2
Several Times per Month	5.9	6.9	5.8	N/A
Occasionally	8.9	11.1	11.0	N/A
LENGTH OF TIME AS A BUS RIDER				
Less than One Month	8.2	9.6	13.9	N/A
One Month to a Year	30.0	31.8	49.2	N/A
One Year to Two Years	13.3	13.6	17.1	N/A
More than Two Years	48.5	45.0	20.0	N/A
RATING OF OVERALL SERVICE				
Good	49.7	53.3	63.3	50.1
Fair	40.7	39.4	29.8	37.5
Poor	9.6	7.3	6.9	9.2
Don't Know	-	-	-	3.2
RATING TRANSFER SERVICE				
Good	49.7	45.0	49.0	61.1
Fair	40.7	40.1	38.1	24.0
Poor	9.6	14.9	12.9	5.2
Don't Know	-	-	-	9.7
NUMBER OF VEHICLES IN HOUSEHOLD				
None	46.2	45.8	39.6	22.6
One	32.9	34.5	30.7	30.5
Two	15.3	15.3	21.4	27.7
Three and Over	5.6	4.4	8.3	19.0

	MTDB Area	Study Area		
		[illegible]	MCT	CUT
WAS A PRIVATE VEHICLE AVAILABLE FOR THIS TRIP?				
Yes	17.9	15.7	13.5	22.7
No	82.1	84.3	86.5	77.3
WHAT ALTERNATIVE TO TRANSIT FOR THIS TRIP?				
Auto Driver	12.6	11.1	6.9	17.9
Auto Passenger	25.4	26.2	19.5	14.3
Bicycle	9.0	6.6	5.1	8.1
Walking	17.6	16.3	43.6	26.5
Taxi	11.8	14.6	0.4	3.6
Dial-a-Ride	3.9	3.1	4.6	N/A
Social Service	0.7	0.8	1.1	N/A
Not Take Trip	19.0	21.3	10.8	13.1
SDTC				8.3
Other				6.2
ARE YOU A LICENSED DRIVER?				
Yes	57.1	58.2	39.2	N/A
No	42.9	41.8	60.8	N/A
HOW MANY LICENSED DRIVERS IN HOUSEHOLD?				
None	18.2	14.0	17.9	N/A
One	30.7	33.1	26.1	N/A
Two	31.1	31.7	34.0	N/A
Three	11.3	11.5	10.0	N/A
More than Three	8.7	9.7	12.0	N/A
PERSONS PER HOUSEHOLD				
One	19.8	12.6	9.0	8.1
Two	26.2	19.1	15.6	16.5
Three	18.1	20.1	18.8	19.2
Four	14.2	16.5	15.8	18.1
Five	9.6	13.7	17.2	16.8
Six or More	12.1	18.0	23.6	21.3
PASSENGER STATUS				
Visitor-Tourist	4.3	6.5	1.2	1.2
Member of Armed Forces	8.8	18.5	3.5	1.4
Student	28.6	20.2	45.2	64.4
Employed	50.6	49.4	34.9	41.3
Volunteer Worker	3.7	3.2	3.2	-
Homemaker	14.0	13.7	14.7	-
Retired	10.3	4.9	9.2	5.6
Handicapped	3.7	3.3	3.0	-
SEX OF RIDER				
Male	46.8	54.1	40.5	39.5
Female	53.2	45.9	59.5	60.5
AGE OF RIDER				
12-16 Years	4.0	2.7	11.8	17.4
17-18 Years	9.3	9.2	25.8	(46.3)
19-24 Years	28.1	32.5	14.4	( )
25-44 Years	33.3	36.2	26.1	28.5
45-59 Years	11.9	11.6	10.8	9.5
60 and Over	13.4	7.8	11.1	6.2
HOUSEHOLD INCOME				
Less than $5,000	23.6	24.2	26.3	18.2
$5,000 - $10,000	28.6	30.3	31.2	12.5
$10,000 - $15,000	16.7	18.7	15.6	11.9
$15,000 - $20,000	12.5	11.4	7.5	18.0
$20,000 - $25,000	[illegible]	[illegible]	7.5	9.5	19.9
$25,000 - $35,000	[illegible]	[illegible]	3.5	7.1	(19.5)
Over $35,000	[illegible]	[illegible]	4.4	4.8	( )
ETHNIC BACKGROUND				
White	58.5	35.8	31.8	N/A
Black	19.9	19.9	20.3	N/A
Hispanic	18.8	40.2	36.2	N/A
Oriental	3.2	3.3	11.9	N/A
Other	0.3	0.4	0.8	N/A
Undeterminable	0.3	0.4	0.2	N/A

Source: 1981 Transit Ridership Survey.

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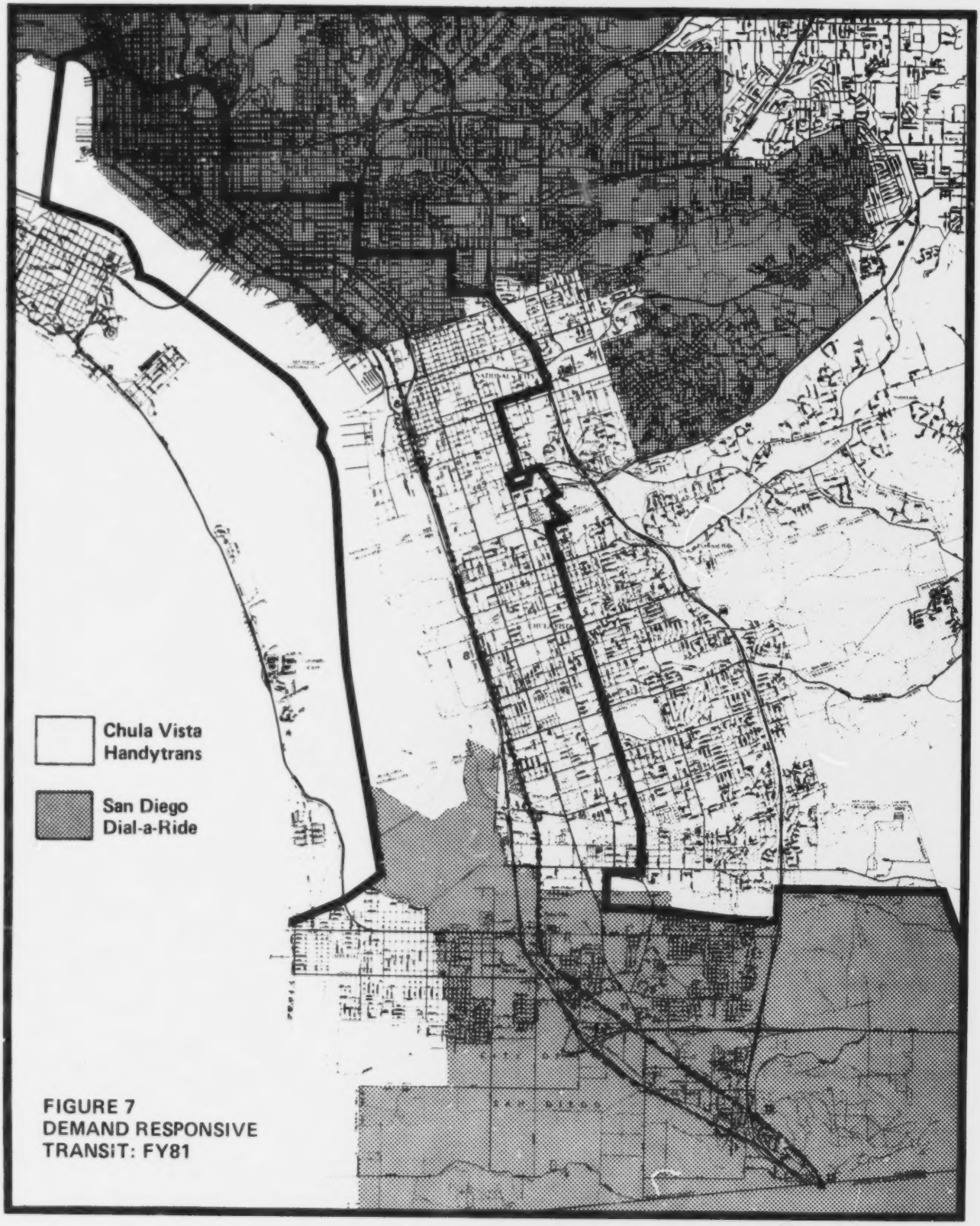

FIGURE 7
DEMAND RESPONSIVE
TRANSIT: FY81

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TABLE 22

PUBLIC DIAL-A-RIDE SERVICE
(FY81)

Operator	Fleet Size	Revenue Miles	Revenue Passengers	Base Fare	Operating Budget
All Systems	70	1,158,000	505,000	$.50-$.75	$1,675,000
Dial-A-Ride	21	400,000	138,000	$.50+ $.25/zone	596,000
Handytrans	4	41,000	13,000	$.75	179,000

SOURCE: 1981 Regional Transportation Improvement Program.

Social Service Agency Transportation Services

Of the 249 social service agencies in San Diego County which provide some form of transportation service, 84 are located in the study area. Table 23 shows that 25 agencies are located in the Centre City and 23 in Barrio Logan. It is estimated that the social service agencies carry at least as many persons as the public dial-a-ride services.

TABLE 23

SOCIAL SERVICE AGENCY TRANSPORTATION

Community	Agencies		Vehicles	Monthly Vehicle Miles	
	Total	Owning Vehicles		Total	Per Vehicle
Centre City	25	10	26	22,300(a)	950
Barrio Logan	23	6	9	8,000(b)	1,350
National City	10	3	4	N/A (c)	850
Chula Vista/Otay	13	10	13	11,800(d)	1,200
So. San Diego/ Imperial Beach	13	3	8	1,250(e)	600
CORRIDOR TOTAL:	84	32	60	44,200	1,050

(a) 3 agencies operating 5 vehicles not reporting.
(b) 2 agencies operating 3 vehicles not reporting.
(c) 2 agencies operating 3 vehicles not reporting.
(d) 3 agencies operating 3 vehicles not reporting.
(e) 1 agency operating 4 vehicles not reporting.

SOURCE: 1980 Social Service Agency Transportation Inventory.

Taxicab Service

In San Diego County, there are 188 taxicab companies operating 645 taxicabs. There are 76 taxicab companies operating 516 licensed taxicabs throughout the study area, as shown in Appendix IV. Six jurisdictions within the study area have taxicab ordinances. They are the Cities of San Diego, National City, Chula Vista, and Imperial Beach, the County of San Diego, and the San Diego Unified Port District.

There are approximately 10,000 taxicab trips per day in the San Diego region. The LRT study area generates an estimated 3,500 taxicab trips each day. Of the total taxicab passengers, 72.1% were residents and 27.9% were visitors to the San Diego region. Major trip generators are Centre City, Barrio Logan and National City.

Table 24 shows that 33.5% of all resident taxicab trips originate in the LRT study area. Additionally, 34.2% of the residents traveling by taxicab have a destination in the study area. One out of five resident taxicab trips had an origin or destination in either Centre City or Barrio Logan.

TABLE 24

RESIDENT TAXICAB TRIPS
(Percent of Regional Total)
(1979)

Community	Origin	Destination
Centre City	11.5	14.7
Barrio Logan	11.1	6.9
National City	5.3	7.5
Chula Vista	1.9	2.1
Otay	0.9	0.3
Palm City/Nestor	0.1	1.1
San Ysidro	0.1	0.6
Imperial Beach	2.6	1.0
Total	33.6	34.2

SOURCE: 1979 Taxi Ridership Survey.

Almost 37% of all visitor taxicab trips either originate or terminate in the study area. Table 25 shows that up to a third of the visitor trips are generated in Centre City and Barrio Logan. Major trip generators are the central business district, Harbor Drive, and 32nd street Naval Base.

TABLE 25

VISITOR TAXICAB TRIP GENERATORS
(Percent of Regional Total)

Community	Origin	Destination
Centre City	22.7	23.1
Barrio Logan	12.4	5.4
National City	3.1	3.5
Chula Vista	0.5	1.1
Otay	0.3	0.0
Palm City/Nestor	0.0	0.3
San Ysidro	0.0	1.2
Imperial Beach	0.0	0.0
Total	39.0	34.6

SOURCE: 1979 Taxi Ridership Survey.

Jitney Service and Vehicles for Hire

Jitneys provide a form of taxi service which is limited to fixed routes and is open to shared riding. A potential passenger can hail a jitney with vacant capacity anywhere along its route or at designated stops and ride to any other point along the route. Fares are often based on a zone-rate. The vehicles used are small, usually carrying no more than twelve passengers.

All eight jitney operators in the region operate in the study area, serving military bases and visitors to the San Diego region.

Vehicles for hire include traditional limousine service and other pre-arranged transportation vehicles which would base their fares on a per hour, per mile, or special event contract basis. There are 12 vehicle for hire operators in the study area.

PRIVATE TRANSIT OPERATORS

Greyhound, Trailways and Mexicoach provide service between Centre City, International Border (San Ysidro), and Downtown Tijuana. In addition, Mexicoach connects Centre City with Tijuana Airport. Table 26 shows the level of service provided by these operators.

TABLE 26

PRIVATE TRANSIT OPERATIONS
1980

Operator/Service	Daily Trips	Estimated Daily Passengers
GREYHOUND		
Centre City - Tijuana	17	585
Tijuana - Centre City	20	688
Centre City - San Ysidro	21	722
San Ysidro - Centre City	38	1,307
MEXICOACH		
Centre City - Tijuana	7	150
Tijuana - Centre City	9	194
Centre City - Tijuana Airport	8	172
Tijuana Airport - Centre City	9	194
San Ysidro - Tijuana	7	150
Tijuana - San Ysidro	7	150
TRAILWAYS		
Centre City - San Ysidro - Tijuana	9	414
Tijuana - San Ysidro - Centre City	9	414

SOURCE: Operators' Timetables, January, 1981; CALTRANS Passenger Formula.

INTERNATIONAL BORDER CROSSING

The San Diego/Tijuana area is one of the most rapidly developing regions in the world. Almost three million people currently reside in the adjacent metropolitan areas. On a typical weekend, there are approximately 43,500 trips into the United States through the International Border crossing at San Ysidro. On weekdays, over 52,000 persons cross the border. Because the San Diego Trolley terminates at the border facility and because a larger percentage of persons crossing the border are transit dependent, cross-border trips are anticipated to be a major portion on Trolley ridership.

In order to determine the ridership potential and characteristics, two surveys of persons crossing the border were conducted. In November, 1977, a weekday survey was completed, and in May, 1980, a weekend survey was undertaken. Additional information on these surveys is contained in Unpublished Appendix IX.

Weekday Border Crossings

On a typical weekday during 1977, 52,258 people crossed the International Border between the United States and Mexico going north. Of this total, 40,707 were in vehicles. The remaining 11,551 people crossed the border as pedestrians.

Table 27 shows the total number of people crossing the border disaggregated by the four time periods. They also reflect the number of crossings by mode of travel. Even though the number of vehicles crossing the border is fairly consistent among the four time periods, each time period has its own unique characteristics. In the morning peak period, 11,204 people crossed the border between the hours of 6:00 a.m. and 9:50 a.m.

TABLE 27

WEEKDAY BORDER CROSSING TRIPS BY MODE

Time Period	Pedestrians		Vehicle Occupants		Total Persons	
	Number	Percent	Number	Percent	Number	Percent
6:00 AM - 9:59 AM	2,203	19.1	9,001	22.1	11,204	21.4
10:00 AM - 3:59 PM	4,496	38.9	11,504	28.3	16,000	30.6
4:00 PM - 7:59 PM	2,805	24.3	10,565	25.9	13,370	25.6
8:00 PM - 5:59 AM	2,047	17.7	9,637	23.7	11,684	22.4
Total	11,551	100.0	40,707	100.0	52,258	100.0

The vehicle occupancy during this time was 1.70 persons per vehicle. The greatest number of pedestrians crossed during the next time period, from 10:00 AM to 3:59 PM. Almost 40% of all pedestrians that cross the border during a typical day, cross during this period. The greatest number of people per hour cross during the evening peak period between 4:00 PM and 7:59 PM.

Over 67% of all people crossing the border traveled 10 miles or less and about 37% went only five miles or less. Less than 15% of all border crossing travelers went farther than 15 miles.

Over 70% of the people cross the border at least once a week. In fact, nearly 25% of those interviewed indicated that they cross the border daily. Another 23.2% of the people responded that they crossed the border several times per week and 23.9% of all responses indicated that they crossed the border once a week. Of the 52,000 people crossing the border on a weekday, almost 19% were residents of San Diego County, while 70% were Mexican residents.

As would be expected, since a large number of people going north are Mexican residents, 67% of the people responded that they are coming from home, while about 17% of the people indicated that they were coming from a social or recreational trip. These results are provided in Table 28.

Almost one-third of the people with a work destination were pedestrians; however, people destined for work were primarily vehicle drivers, with a rather low vehicle occupancy. Approximately one-fourth of the people going shopping were pedestrians. An even larger proportion of pedestrians are traveling to "Other" destinations, such as school or personal business.

TABLE 28

WEEKDAY BORDER CROSSING TRIPS
BY TRIP PURPOSE

Trip Purpose	Origin in Mexico	Destination in U.S.A.
Home	66.9%	29.2%
Work	3.9%	7.4%
Shop	5.3%	31.6%
Social/Recreation	17.1	10.7
Other	6.8	21.1
Total	100.0	100.0

Weekend Border Crossings

The 1980 International Border Survey was conducted to collect information on travel characteristics between Tijuana and San Diego during a typical weekend. During the survey a total of 3,445 valid samples were received. Of those people surveyed, 42.7% were pedestrians and the others used some type of motor vehicle. More than 70% of those surveyed were residents of the San Diego/Tijuana area.

Table 29 shows the residence of survey respondents. San Diego County residents account for 38.7% of those people surveyed and a total of 31.4% of the sample were residents of Tijuana.

TABLE 29

WEEKEND BORDER CROSSINGS
BY PLACE OF RESIDENCE

Residence	Percent of Total
San Diego County	38.7%
Tijuana	31.4%
Other California	21.8%
Other U.S.A.	4.1%
Other Mexico	3.1%
Other Foreign Nation	0.9%
Total	100.0%

Pedestrians accounted for 42.7% of the trips sampled. The remaining trips were distributed among various private motor vehicles. Persons crossing on public transit vehicles were not sampled.

After crossing the border there was a change in travel mode for many of the respondents. Table 30 shows that 70.8% of those surveyed used a private motor vehicle to complete their trip. A total of 12% of the people continued their trip on San Diego Transit and 4.3% used a private bus. The number of pedestrians dropped to 12% after crossing the border.

TABLE 30

MODE OF ACCESS TO THE BORDER

Mode	Percent of Total
Private Vehicle	70.8%
San Diego Transit	12.0%
Walked	12.0%
Private Bus	4.3%
Taxicab	0.8%
Bicycle	0.1%
Total	100.0%

As expected, the residents of the San Diego/Tijuana area cross the border more frequently than non-residents. Over 18% of the Mexicans and 6.6% of the San Diegans cross the border daily. An additional 14.5% of the San Diego and Tijuana residents surveyed complete this trip several times per week.

The frequent border travelers tend to use a private motor vehicle more than the pedestrian mode for their trip into the U.S.A., whereas, the weekly and bi-monthly traveler tend to walk across the border. More than 43.1% of the occasional respondents stated that they walked. More than 50% of the San Diegans and 72.7% of the Mexicans crossed the border before noon.

Approximately 12% of those crossing the border used San Diego Transit as their primary mode of travel in the U.S.A. Table 31 shows that almost one-third of the transit riders crossed between 2:00 PM and 4:00 PM. This coincides with the fact that 45.7% of the pedestrian border crossing occurred during the same period.

TABLE 31

TIME OF BORDER CROSSING
BY WEEKEND TRANSIT RIDERS

Time	Percent of Total
8:00 - 9:59 AM	9.9%
10:00 - 11:59 AM	24.3%
Noon - 1:59 PM	22.8%
2:00 - 3:59 PM	32.6%
4:00 - 6:00 PM	9.7%
After 6:00 PM	0.7%
Total	100.0%

Table 32 shows the primary reasons for making the trip across the border. Much of the morning traffic is comprised of Mexican residents crossing to shop in San Diego. In the afternoon, the trend is reversed as Americans return from shopping in Mexico. Because this survey was conducted on a weekend, there were few work trips.

TABLE 32

PRIMARY WEEKEND BORDER CROSSING
TRIP PURPOSE

Trip Purpose	Percent of Total
Shopping	43.1
Recreation	25.2
Social Activity	14.8
Personal Business	8.1
Work	2.4
Other	6.4

Because the San Diego Trolley terminates at the International Border, border crossings are anticipated to contribute significantly to its ridership. The transit share of persons crossing the border, trip purposes and time of crossing will be monitored in Phase III.

CHAPTER 4
AUTOMOBILE AND PEDESTRIAN TRAVEL

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Automobile and Pedestrian Travel

Highways are the major component of the region's transportation system. The deserts, mountains, and coastal plains of San Diego County are connected by 7,722 miles of roadway. There are 4,699 miles of roads in the urbanized area. Within the LRT study area, there are 450 miles of arterial streets and roads. A total of 9.5% or 25.8 miles of the region's freeways are located in this area.

The major freeway in the study area is Interstate 5 which serves the International Border Crossing north along San Diego Bay through Centre City, a distance of 17.1 miles. The San Diego Trolley route parallels Interstate 5 through the South Bay. Other freeways which serve the study area are:

Route 163, South-North travel, connects Centre City to Mission Valley and merges with Interstate 15.

Route 94, West-East, connects Centre City to Southeast San Diego and the eastern suburban areas, with a connection to Interstate 8.

Route 75 (Coronado-San Diego Bridge), connects Coronado and Interstate 5 at Barrio Logan. The bridge is two miles long.

Interstate and State Route 15, South-North, connects Barrio Logan and 32nd Street Naval Base to Mission Valley, Escondido and Riverside County.

Route 117, West-East, partially completed freeway, connects I-5 and I-805, continues as Otay Mesa Road to Brown Field Airport. The completed portion of the freeway is 3.3 miles long.

Interstate 805, South-North, connects San Ysidro at I-5, Chula Vista, National City, Mission Valley, and merges with I-5. I-805 travels 3.2 miles of its 28 miles through the study area.

Automobile Ownership and Trips

There are approximately 35,000 registered motor vehicles in the study area. This is an average of 1.5 motor vehicles per household,

compared to a regional average of 1.6 vehicles per household. Vehicle ownership data is not yet available from the 1980 Census.

Trip Generation

Each day there are more than 5.7 million total person trips in the San Diego region. Over 1,800,000, or 13.7%, of these trips occur within the LRT study area. Table 33 shows that the study area attracts approximately 350,000 more trips than it produces. Centre City accounts for over one third of the total trips in the study area. Figure 8 shows the total trip ends in the study area. As indicated, except for the Central Business District of San Diego, most major trip ends are located some distance from the Trolley alignment.

Vehicle Occupancy

The average vehicle occupancy for the whole San Diego region during the peak hour is 1.24 occupants per vehicle (automobiles and light-duty vehicles). Within the LRT study area, the average vehicle occupancy is 1.30 occupants per vehicle. Table 34 shows the average peak hour vehicle occupancy at sites in the study area.

TRAFFIC IMPACTS

The Trolley line is a surface operation, running within city streets in Centre City San Diego and crossing intersecting streets at-grade along the railroad portion of the line. At station sites, there will be increased pedestrian and vehicular activity. In order to measure the impact that the Trolley might have on surface street operations, existing traffic conditions were monitored. The following types of information were gathered:

- Average daily traffic counts
- Turning movement counts
- Queueing counts
- Pedestrian counts
- Travel times

Much of this data is routinely collected by jurisdictions in their traffic counting programs. Where data was not available, special counts were made. Table 35 lists the type of information collected and the location where it was collected. Because of the volume of this data, it has not been published as part of this report. It is contained in unpublished Appendices X, XI and XII, available at the SANDAG or MTDB offices.

Freeway Peaking Characteristics

Table 36 shows the traffic peaking characteristics of four (4) Interstate Route 5 locations. As shown, the weekday peaking characteristics are quite similar for 8th Street, E Street, and Palm Avenue. During the AM, the peak period occurs between 7:00 AM and 8:00 AM for the northbound traffic. The southbound peak occurs between 11:00 AM and noon.

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TABLE 33

DAILY TRIP GENERATION
1978

Jurisdiction	Trip Production		Trip Attraction		Total	
	Number	Percent of Total	Number	Percent of Total	Number	Percent of Total
Centre City	113,800	19.4	412,800	42.7	526,600	33.9
Barrio Logan	58,000	9.9	114,300	11.9	172,300	11.1
National City	71,000	12.1	108,700	11.3	179,700	11.6
Chula Vista	101,200	17.2	135,600	14.1	236,800	15.3
Otay	65,200	11.1	57,500	6.0	122,700	7.9
Palm City/Nestor	48,400	8.2	24,900	2.6	73,300	4.7
San Ysidro	64,300	10.9	58,300	6.1	122,600	7.9
Imperial Beach	65,800	11.2	51,400	5.3	117,200	7.6
Total	587,700	100.0	963,400	100.0	1,551,100	100.0

SOURCE: SANDAG, Series V Regional Growth Forecasts.

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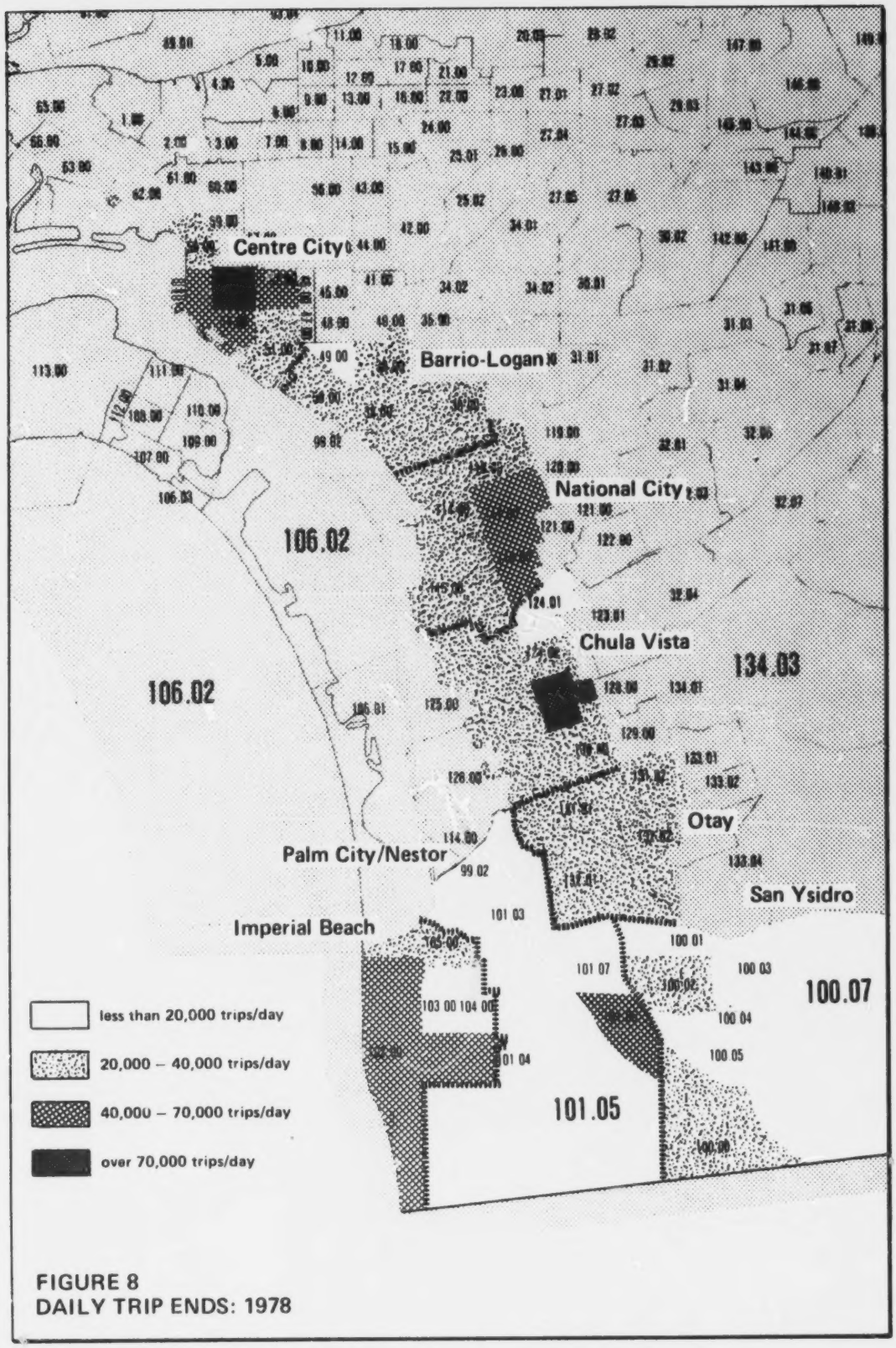

FIGURE 8
DAILY TRIP ENDS: 1978

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TABLE 34

AVERAGE VEHICLE OCCUPANCY
1981

Jurisdiction	Location	Direction	Vehicle Occupancy
Barrio Logan	Vesta Street, south of Birch Street	Southbound	1.332
	I-15 off-ramp, at Ocean View Boulevard	Northbound	1.450
	Highway 75 on-ramp, to Coronado	Southbound to Westbound	1.347
	Sampson Street, south of Kearney Avenue	Southbound	1.290
National City	8th Street, west of R Avenue	Westbound	1.290
Chula Vista	F Street, east of 3rd Avenue	Westbound	1.185
	C Street, east of 4th Avenue	Westbound	1.195
Imperial Beach	Imperial Beach Boulevard, east of 4th Street	Eastbound	1.458
Otay	Palm Avenue, west of I-805	Eastbound	1.386
	Del Sol Boulevard, east of Picador Boulevard	Westbound	1.234

SOURCE: Regional Surveillance Program.

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TABLE 35

TRAFFIC MONITORING

Code	Street Name	Location/Comments
TTS	Ash	Kettner to 11th
TTS	A	Kettner to 12th
ADT	A	Kettner to 12th
TTS	B	16th to Kettner
ADT	B	16th to 4th
P	B	4th - 5th
P	B	9th - 10th
TTS	C	Front to 16th
ADT	C	Kettner to 14th
P	C	Front - 1st
P	C	4th - 5th
P	C	9th - 10th
P	C	@ 12th
T	C	and Front
T	C	and 5th
T	C	and 6th
T	C	and 8th
T	C	and 12th
TTS	Broadway	Kettner to 16th
ADT	Broadway	Kettner to 14th
P	Broadway	1st - 2nd
P	Broadway	4th - 5th
T	Broadway	and 6th
P	Broadway	9th - 10th
P	Broadway	@ 12th
T	Broadway	and 12th
TTS	F	16th to Kettner
TTS	G	Kettner to 16th
P	Columbia	B - C
T	Columbia	and B
P	Columbia	C - Broadway
TTS	Front	Ash to Market
T	Front	and A
TTS	First	Market to Ash
P	3rd	C - Broadway
TTS	4th	Ash to Market
TTS	5th	Market to Ash
TTS	10th	A to E
ADT	10th	A to Market
TTS	11th	Market to A
ADT	11th	Imperial to A
T	11th	and Broadway
TTS	12th	A to Imperial
	12th	and E

TABLE 35 (continued)

Code	Street Name	Location/Comments
T	12th	and E
T	12th	and Market
ADT	12th	A to Imperial
P	12th	@ C
P	12th	@ Broadway
P	12th	@ Market
T	12th	and Imperial
T	12th	and F
T	12th	and G
T	12th	and Market
T	12th	and Imperial
TTS	13th	C to Imperial
ADT	13th	North of E Street
TTS	14th	National to C
ADT	14th	North of E Street
T	Island	and Market
ADT	Sigsbee	SD&AE
ADT	Beardsley	SD&AE
ADT	Crosby	SD&AE
ADT	Sampson	SD&AE
ADT	Schley	SD&AE
ADT	Harbor	North of 28th
T	Harbor	and 28th
P	28th	Harbor to Main
ADT	28th	SD&AE (North of Harbor)
ADT	Harbor	South of 28th
ADT	Harbor	North of 32nd
ADT	Harbor	Sampson and Sicard
ADT	32nd	SD&AE
T	32nd	and Harbor
ADT	Harbor	South of 32nd
ADT	8th	SD&AE
T	8th	and Harbor
ADT	Civic Center	SD&AE
T	22nd	and National
ADT	Wilson	22nd - 24th
T	Wilson	and 24th
ADT	24th	Hoover - Wilson
T	24th	and Hoover
ADT	E	SD&AE
ADT	F	SD&AE
ADT	G	Broadway to Woodlawn
ADT	Oaklawn	G to I
ADT	Woodlawn	G to H
T	H	and Woodlawn
ADT	H	Broadway to Walnut
ADT	J	SD&AE

TABLE 35 (continued)

Code	Street Name	Location/Comments
ADT	L	SD&AE
ADT	Moss	SD&AE
ADT	Naples	SD&AE
ADT	Palomar	SD&AE
T	Palomar	and Industrial
ADT	Industrial	Naples to Anita
ADT	Anita	SD&AE
ADT	Palm	SD&AE
ADT	Hollister	North of Palm
ADT	Hollister	South of Palm
T	Palm	and Hollister
ADT	Elm	SD&AE
ADT	Coronado	SD&AE
ADT	25th	North of Iris
ADT	27th	SD&AE
T	Iris	and Beyer
ADT	Iris	SD&AE
T	27th	and Iris
ADT	Dairy Mart Road	SD&AE
T	Smythe	and Beyer
ADT	Smythe	@ Beyer
ADT	Seaward	SD&AE
ADT	West Park	SD&AE
ADT	West Park	North of SD&AE
ADT	East Park	SD&AE
T	San Ysidro	and Beyer
ADT	San Ysidro	@ Beyer
T	San Ysidro	and I-5 Ramp
ADT	San Ysidro	@ Loop

TTS - time travel study
ADT - average daily traffic
Q - queueing
T - turning movements
P - pedestrian counts

TABLE 36

INTERSTATE 5 TRAFFIC VOLUME CHARACTERISTICS

			Morning Peak				Afternoon Peak			
			Weekday		Weekend		Weekday		Weekend	
Location	Season	Direction	Hour	% of Total	Hour	% of Total	Hour	% of Total	Hour	% of Total
I5 at 8th St. National City	Winter	N	7:00 - 8:00 AM	10.8%	11:00 - Noon	6.8%	3:00 - 4:00 PM	7.9%	1:00 - 2:00 PM	7.3%
		S	7:00 - 8:00 AM	6.4%	11:00 - Noon	6.9%	4:00 - 5:00 PM	11.2%	3:00 - 4:00 PM	7.8%
	Spring	N	7:00 - 8:00 AM	10.1%	11:00 - Noon	7.2%	3:00 - 4:00 PM	7.5%	Noon - 1:00 PM	7.3%
		S	11:00 - Noon	7.1%	11:00 - Noon	7.5%	4:00 - 5:00 PM	10.4%	Noon - 1:00 PM	6.9%
	Summer	N	7:00 - 8:00 AM	9.5%	11:00 - Noon	6.6%	3:00 - 4:00 PM	7.4%	Noon - 1:00 PM	7.2%
		S	11:00 - Noon	5.5%	11:00 - Noon	6.7%	4:00 - 5:00 PM	10.2%	3:00 - 4:00 PM	6.9%
	Fall	N	7:00 - 8:00 AM	10.9%	11:00 - Noon	6.7%	3:00 - 4:00 PM	7.8%	1:00 - 2:00 PM	6.7%
		S	7:00 - 8:00 AM	6.5%	11:00 - Noon	6.7%	4:00 - 5:00 PM	10.4%	4:00 - 5:00 PM	7.0%
I5 at E St. Chula Vista	Winter	N	7:00 - 8:00 AM	10.9%	11:00 - Noon	6.9%	3:00 - 4:00 PM	7.3%	1:00 - 2:00 PM	7.1%
		S	11:00 - Noon	5.5%	11:00 - Noon	7.0%	4:00 - 5:00 PM	11.7%	3:00 - 4:00 PM	7.6%
I5 at Palm Ave. Nestor	Fall	N	7:00 - 8:00 AM	9.1%	11:00 - Noon	7.2%	3:00 - 4:00 PM	7.0%	Noon - 1:00 PM	6.9%
		S	11:00 - Noon	5.4%	11:00 - Noon	7.1%	4:00 - 5:00 PM	10.7%	Noon - 1:00 PM	7.6%
I5 at Sycamore San Ysidro	Winter	N	8:00 - 9:00 AM	6.5%	11:00 - Noon	7.8%	2:00 - 3:00 PM	7.2%	4:00 - 5:00 PM	7.4%
		S	11:00 - Noon	5.7%	11:00 - Noon	7.5%	5:00 - 6:00 PM	8.6%	Noon - 1:00 PM	8.6%
	Spring	N	11:00 - Noon	5.9%	10:00 - 11:00 AM	6.5%	3:00 - 4:00 PM	6.0%	1:00 - 2:00 PM	6.6%
		S	11:00 - Noon	5.9%	11:00 - Noon	8.5%	5:00 - 6:00 PM	8.6%	Noon - 1:00 PM	7.4%
	Summer	N	11:00 - Noon	5.8%	10:00 - 11:00 AM	6.3%	1:00 - 3:00 PM	11.6%	3:00 - 4:00 PM	6.2%
		S	10:00 - 11:00 AM	5.9%	11:00 - Noon	7.9%	4:00 - 5:00 PM	8.6%	Noon - 1:00 PM	7.7%
	Fall	N	8:00 - 9:00 AM	6.4%	11:00 - Noon	7.1%	2:00 - 3:00 PM	6.6%	Noon - 1:00 PM	6.8%
		S	11:00 - Noon	4.7%	11:00 - Noon	8.1%	4:00 - 5:00 PM	10.0%	Noon - 1:00 PM	8.8%

The PM peak hour for northbound traffic occurs between 3:00 PM and 4:00 PM. The southbound peak occurs between 4:00 PM and 5:00 PM. The northbound AM peak and the southbound PM peak traffic volumes range from 9.1% to 11.7% of the daily traffic volume. The southbound AM peak and the northbound PM peak account for approximately 7% of the daily traffic count. The PM peaks tend to be more congested than the AM peak periods.

SOURCE: Regional Surveillance Program.

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Traffic Accidents

An inventory was made of traffic accidents reported in calendar 1979 that occurred along the heavily traveled street sections located close to the then-proposed San Diego Trolley stations. Table 37 documents the location and number of accidents by area.

CENTRE CITY TRAVEL CHARACTERISTICS

Centre City encompasses 243 city blocks, an area of approximately two square miles. It is bounded on the north by Laurel Street and Interstate 5, on the east by Interstate 5, on the south by Commercial Street and on the west by San Diego Bay.

Centre City is located at the heart of the region's transportation system. It is accessed by three major freeways and a large number of major surface streets. Over 56% of the region's population can reach the downtown area by auto in 20 minutes or less during non-peak hours.

Traffic Peaking Characteristics

Traffic volume data was gathered at five Centre City locations. Traffic volumes were analyzed to determine peaking variations. Peak traffic characteristics are quite similar at these sites, as shown in Table 38. The AM peak traffic volumes are recorded between 10:00 AM and noon at all sites and in all directions except westbound traffic on Market Street, where the traffic peak occurs between 7:00 AM and 8:00 AM.

The PM peak traffic period occurs between 5:00 PM and 6:00 PM except for southbound traffic on 12th Avenue, westbound traffic on Market Street, and traffic to 1st Avenue. On 12th Avenue, the southbound traffic peaks between 2:00 PM and 3:00 PM, on Market Street the westbound peak period occurs between 1:00 PM and 2:00 PM, and on 1st Avenue the traffic peak occurs between 6:00 PM and 7:00 PM.

Speed Delay Counts

Speed delay counts were obtained at six locations along 13th Street in the Centre City area. This street was selected for the counts instead of 12th Street because LRT construction activities had already begun at the time of the survey. Once the Trolley is operating along 12th Avenue, it will share right-of-way with automobiles and trucks. Both streets run in a north-south direction and are quite similar in nature.

The speed delay counts were taken at five different times on March 6, 1980, as shown in Table 39. As shown, the time and location of the count impacts the time required to travel between points.

TABLE 37

TRAFFIC ACCIDENTS IN THE STUDY AREA
1980

Location/Street Segment	Number of Accidents
BARRIO LOGAN AREA	
Crosby from National to Sante Fe Railroad	15
Harbor Drive from 8th to Coronado Bridge	76
Imperial Avenue between 17th and 10th Avenue	15
Ocean View between Imperial and 32nd Street	99
Main Street	101
Sampson Street	24
30th Street between Main and Ocean View Blvd.	24
32nd between Ocean View and Main Street	56
Wabash Blvd. from 32nd to Boston Avenue	3
Vesta Street	8
NATIONAL CITY AREA	
D Avenue from 18th to 30th	25
24th Street between Tidelands and Highland Ave.	72
30th - to Highland Avenue	65
Division Street - Osburn to Highland	22
4th Street between Roosevelt and Highland	175
Roosevelt Avenue	27
18th between Wilson and Highland	66
CHULA VISTA AREA	
H Street - Broadway to Bay Boulevard	53
Broadway between F and J Streets	94
5th Avenue between F and J Streets	55
Bay Boulevard	18
Industrial Boulevard	24
F Street between Bay Blvd. and 5th Street	30
I Street between Bay Blvd. and 5th Street	15
J Street between Tidelands Blvd. and 5th Street	22
4th Avenue between F and J Streets	62
Palomar between Bay Blvd. and Broadway	6
Intersection Palomar at Industrial Boulevard	8
SAN YSIDRO/PALM CITY AREA	
Palm Avenue from Hollister to Beyer Way	14
Beyer Boulevard	44
Coronado Avenue from Beyer Blvd. to 19th Street	54
Hollister Street between Main and Coronado Ave.	16
Iris Avenue	6
Dairy Mart Road between Beyer and San Ysidro Blvd.	5
San Ysidro Blvd. between West Park and Dairy Mart	30
West Park Avenue	6
East Park Avenue	3
Otay Mesa Road	7
25th Street	7
Del Sol Blvd. between Picador Blvd. and Beyer Way	8
Picador Boulevard	9
Outer Road	5

SOURCE: San Diego Association of Governments.

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TABLE 38

CENTRE CITY TRAFFIC CHARACTERISTICS
1979

Location	Direction	AM Peak Hour	AM Peak Percent of ADT*	PM Peak Hour	PM Peak Percent of ADT*
C Street, between 10th & 11th Avenues	East	11:00 AM - Noon	7.2%	5:00 PM - 6:00 PM	12.4%
First Avenue, between A & Ash Streets	North	11:00 AM - Noon	7.2%	6:00 PM - 7:00 PM	13.3%
11th Avenue, between B & C Streets	North	11:00 AM - Noon	7.9%	5:00 PM - 6:00 PM	10.4%
12th Avenue, between B & C Streets	North	11:00 AM - Noon	8.0%	5:00 PM - 6:00 PM	5.8%
	South	11:00 AM - Noon	10.9%	2:00 PM - 3:00 PM	8.6%
Market Street, between 4th & 5th Avenues	East	11:00 AM - Noon	7.2%	5:00 PM - 6:00 PM	11.5%
	West	7:00 AM - 8:00 AM	9.7%	1:00 PM - 2:00 PM	8.8%

*ADT stands for the Average Daily Traffic, 1979.

SOURCE: Regional Surveillance Program.

TABLE 39

SPEED DELAY COUNTS
THIRTEENTH STREET
(Time Shown in Minutes)
1979

Time	FROM: TO:	C Street Broadway	Broadway F Street	F Street G Street	G Street Market	Market K Street	K Street Imperial
7:39 AM		.30	.83	1.08	2.55	4.45	5.05
7:59 AM		3.91	3.46	2.65	2.38	1.65	.55
8:04 AM		.28	1.08	1.45	2.65	4.08	4.71
10:32 AM		.26	1.23	1.83	2.06	3.28	3.80
10:52 AM		4.03	3.61	2.71	2.35	1.66	.56

SOURCE: San Diego Association of Governments.

Parking

All parking spaces located within the Centre City area during the summer of 1981 are shown in Figure 9. The overall parking space total in the Centre City between 1977 and 1981 has remained about the same. Distribution of the spaces and the type of spaces available have changed due to redevelopment. The core area has shown a slight decrease in the number of spaces while the fringe area has gained in the number of spaces.

The parking space inventory (Table 40) identifies all downtown parking by type, location, capacity and vacancies. The non-CBD heading refers to the fringe area within the Centre City, outside the core area. There were 39,438 parking spaces counted for the Centre City, not including passenger zones, commercial zones, red curbing, taxi and off-street business equipment lots. During the periods 9:00 AM - 11:00 AM and 1:30 PM - 3:00 PM, 10,890 spaces were vacant, a 27.6% vacancy rate. The core area had 15,545 total spaces with 3,383 vacancies, a rate of 21.8%. On-street parking spaces were vacant less than half the rate of off-street parking.

Pedestrian Counts

The Centre City pedestrian survey was conducted to examine pedestrian traffic in the downtown area. Survey sites are shown in Figure 10. Pedestrian counts were recorded at 15- minute intervals during the following periods:

March 5, 6, 8, 1980	7:00 AM - 9:00 AM
	11:00 AM - 1:00 PM
	4:00 PM - 6:00 PM
	9:00 PM - 10:00 PM
March 12, 13, 15, 1980	7:00 AM - 9:00 AM
	11:00 AM - 2:00 PM
	4:00 PM - 6:00 PM

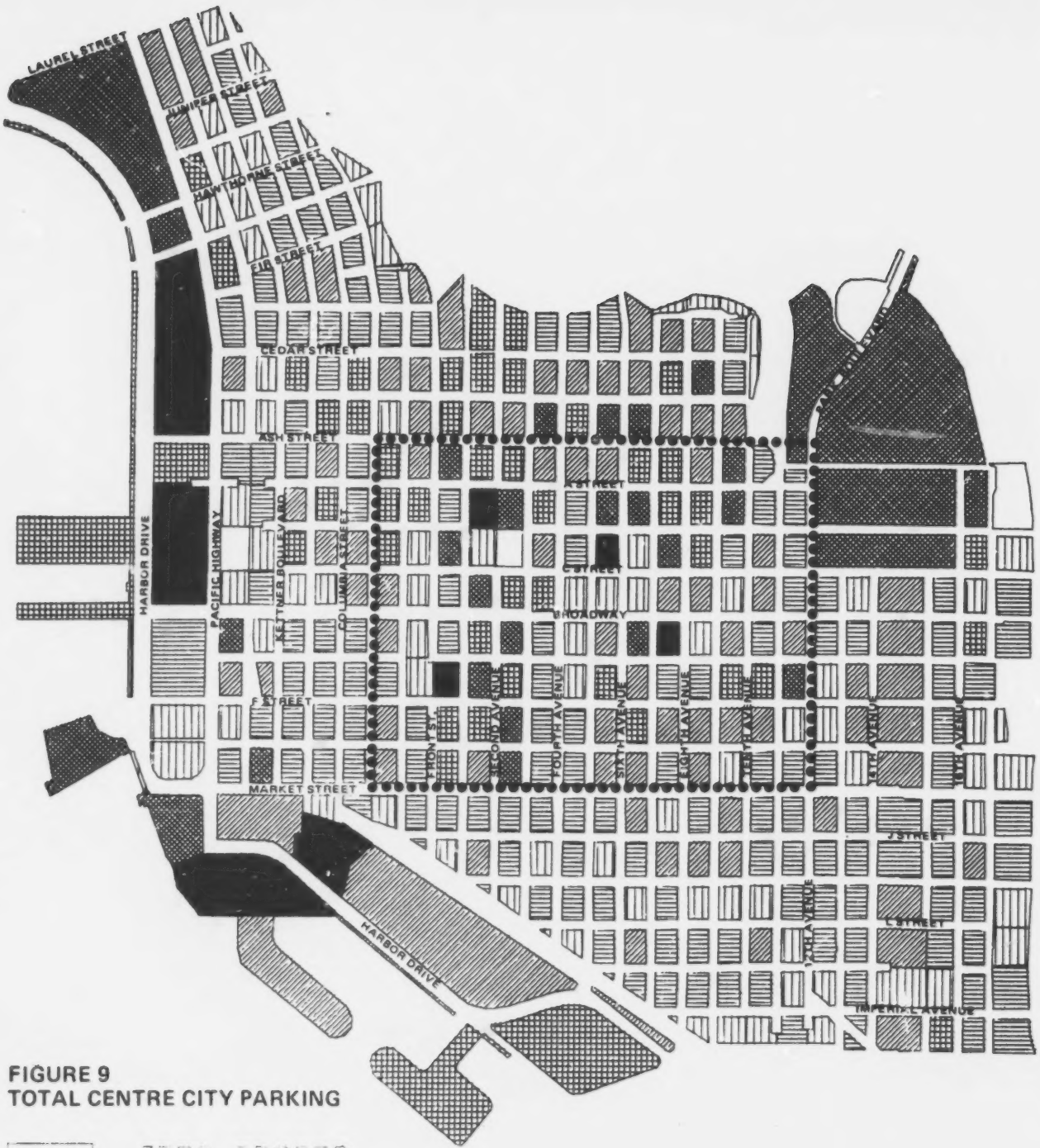

FIGURE 9
TOTAL CENTRE CITY PARKING

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TABLE 40

TOTAL CENTRE CITY PARKING

Type of Facility	Centre City Spaces	Centre City Vacancy	Centre City % Vacancy	Core Spaces	Core Vacancy	Core % Vacancy	Non-CBD Spaces	Non-CBD Vacancy	Non-CBD % Vacancy
White Passenger Zone	279			216			63		
Yellow Commercial Zone	1,190			459			731		
Non No Parking	3,606			1,257			2,349		
Red Bus Stop	659			243			416		
Taxi Stand	33			23			10		
Handicapped Parking	58	28	48.28	31	11	35.48	27	17	62.96
Special Parking (Police, Sheriff, Port. Perm.)	82	37	45.12	6	1	16.67	76	36	47.37
Motorcycle	211	95	45.02	126	40	31.75	85	55	64.71
12-Minute Meter	2	0	0.00	2	0	0.00	0	0	0.00
36-Minute Meter	29	7	24.14	29	7	24.14	0	0	0.00
1-Hour Meter	411	118	26.76	335	55	16.42	106	63	59.43
2-3 Hour Meter	2,100	574	27.33	1,021	205	20.08	1,079	369	34.20
1-Hour Diagonal Meter	23	13	56.52	0	0	0.00	23	13	56.52
2-3 Hour Diagonal Meter	963	622	64.59	4	0	0.00	959	622	64.86
2-Hour Meter, No Parking 1530-1800	19	8	42.11	19	8	42.11	0	0	0.00
Metered Parking, Total:	3,577	1,342	37.52	1,410	275	19.50	2,167	1,067	49.24
Unmetered, 2-Hour	349	48	13.75	120	17	14.17	229	31	13.54
Unmetered, Unlimited	4,838	642	13.27	257	18	7.00	4,581	624	13.62
Unmetered, Diagonal Unlimited	1,167	174	14.91	0	0	0.00	1,167	174	14.
Unmetered, Unlimited except 600-900	18	2	11.11	9	1	11.11	9	1	11.11
Unmetered Parking, Total:	6,372	886	13.59	386	36	9.33	5,986	830	13.87
Construction Zone	756			239			517		
Total On-Street Parking:	10,000	2,368	22.99	1,959	363	18.53	8,341	2,005	24.04
Structure, Non-Public	1,571	432	27.50	1,273	341	26.79	298	91	30.54
Structure, Public	6,287	1,379	21.93	5,600	1,122	20.04	687	257	37.41
Structure, Customers Only	771	396	51.36	231	114	49.35	540	282	52.22
Total Structure Parking:	8,629	2,207	25.58	7,104	1,577	22.20	1,525	630	41.31
Lot, Non-Public	7,735	2,233	28.87	1,492	337	22.59	6,243	1,896	30.37
Lot, Public	5,817	1,170	20.11	2,638	551	20.89	3,179	619	19.47
Lot, Public - Attendants	2,849	738	25.90	1,589	265	16.68	1,260	473	37.54
Lot, Customers Only	4,108	2,174	52.92	763	290	38.01	3,345	1,884	56.32
Total Surface Lot Parking:	20,509	6,315	30.79	6,482	1,443	22.26	14,027	4,872	34.73
Total Off-Street Parking:	29,138	8,522	29.25	13,586	3,020	22.23	15,552	5,502	35.38
Lot Business Equipment	389	119	30.59	34	13	38.24	355	106	29.86
TOTAL CENTRE CITY PARKING:	39,438	10,890	27.61	15,545	3,383	21.76	23,893	7,507	31.42

SOURCE: 1981 Centre City Parking Inventory.

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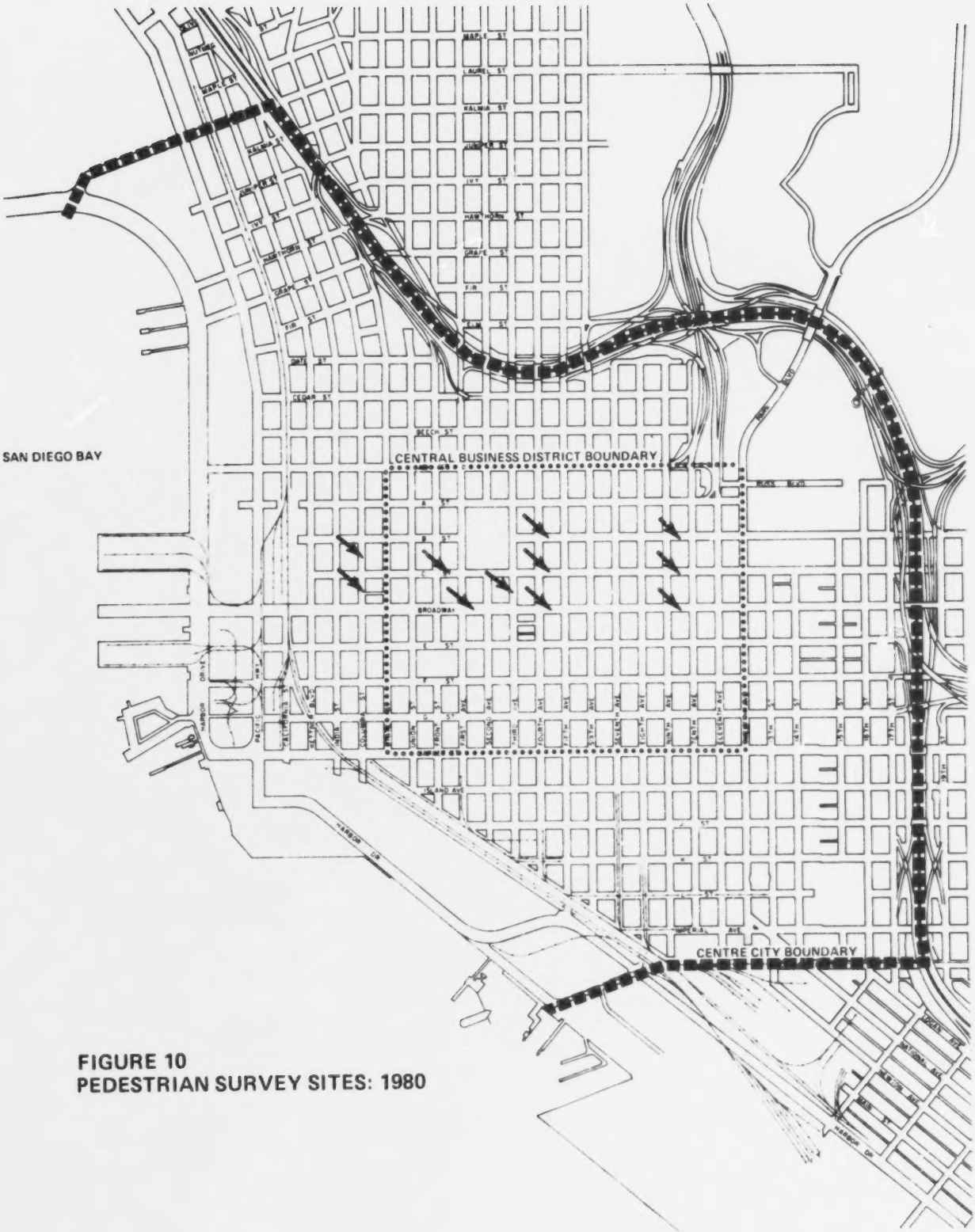

FIGURE 10
PEDESTRIAN SURVEY SITES: 1980

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Appendix V shows the results of the Centre City pedestrian survey. Pedestrian travel characteristics vary significantly between sites. Those survey sites experiencing the heaviest pedestrian traffic are:

- Broadway between 1st and 2nd Avenues
- Broadway between 9th and 10th Avenues
- 3rd Avenue between Broadway and C Street
- C Street between 4th and 5th Avenues
- B Street between 4th and 5th Avenues
- 12th Avenue and Broadway Intersection

All but one of these sites is located in the heart of the central business district. Numerous activities, such as work, shopping, and eating establishments, are located in this area. Some sites generated very little pedestrian traffic. The existing land use and location of these sites is the primary reason for this. These sites include:

- Columbia Street between B and C Streets
- Columbia Street between C and Broadway

All sites record a drop in pedestrian activity on the weekend. Only the sites along Broadway and C Street between 4th and 5th Avenue recorded significant volumes of weekend pedestrians. Fewer than one hundred pedestrians were recorded on Columbia Street between B and C Streets.

The peak period for pedestrian activity occurs between 11:00 AM and 2:00 PM. At some locations almost 75% of the daily pedestrian activity was recorded during this time. The evening pedestrian count tends to be lower than the morning period. The only sites with a substantial level of activity are located along Broadway.

Vehicle Occupancy

Regionally, the average vehicle occupancy is 1.29 persons per vehicle. Within the LRT study area, the average vehicle occupancy is 1.30. Table 41 shows that the average vehicle occupanty is 1.286 in Centre City.

COMMUTE MODE DATA

Commute mode data was acquired from the CALTRANS Commuter Computer ridesharing program. Through Commuter Computer efforts, employers in the San Diego region are contacted and asked to participate in a program to encourage ridesharing. Participants periodically survey employees to determine the mode of travel used. Within the LRT study area, commute mode data have been acquired from 20 major employers.

Figure 11 shows how the employers are distributed throughout the study area. Ten of the employers are located in Centre City, the region's governmental and financial center. Commute mode data are shown in Table 42. The single occupant automobile is the most prominent mode of travel used in the study area. However, workers in Centre City are less likely to travel this way than in other parts of the study area.

TABLE 41

CENTRE CITY 1980 VEHICLE OCCUPANCY

	Location	Direction	Vehicle Occupancy
Centre City	Market Street, west of 21st Street	Westbound	1.386
	I-5, Second Avenue off-ramp	Southbound	1.234
	Route 94, at 16th Street	Westbound	1.307
	Route 94, on 94 to I-5	Westbound to Northbound	1.283
	Route 163, at A Street	Southbound	1.212
		OVERALL:	1.286

SOURCE: San Diego Association of Governments.

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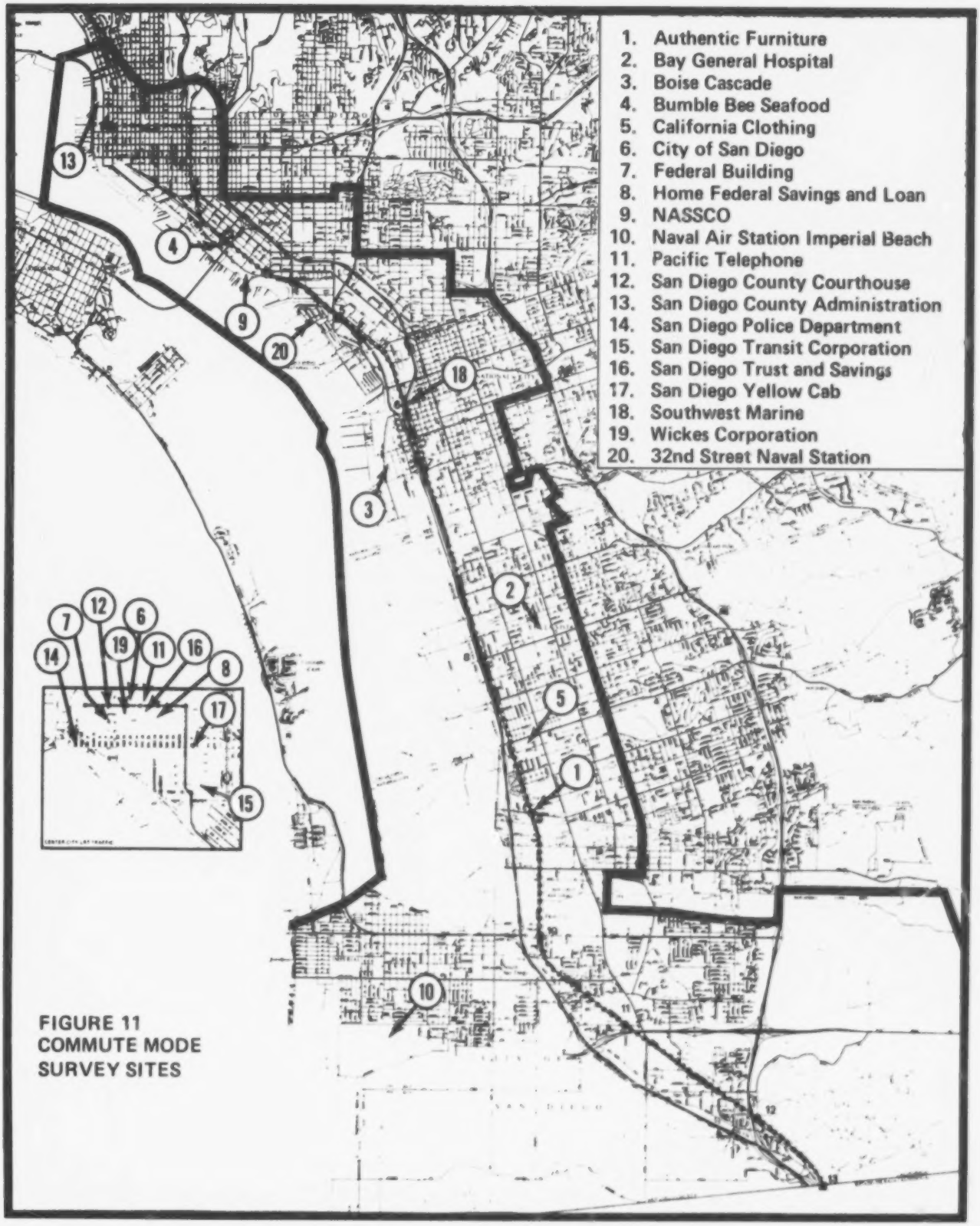
1. Authentic Furniture
2. Bay General Hospital
3. Boise Cascade
4. Bumble Bee Seafood
5. California Clothing
6. City of San Diego
7. Federal Building
8. Home Federal Savings and Loan
9. NASSCO
10. Naval Air Station Imperial Beach
11. Pacific Telephone
12. San Diego County Courthouse
13. San Diego County Administration
14. San Diego Police Department
15. San Diego Transit Corporation
16. San Diego Trust and Savings
17. San Diego Yellow Cab
18. Southwest Marine
19. Wickes Corporation
20. 32nd Street Naval Station

FIGURE 11
COMMUTE MODE
SURVEY SITES

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TABLE 42

COMMUTE MODE SURVEY
(1980)

Employer	Car Drive Alone	Carpool	Public Transit	Car Dropped-Off	Motorcycle	Vanpool/ Buspool	Walk	Bicycle	Other	Total
Authentic Furniture	62.3	21.1	4.5	5.8	2.7	0.0	*	*	3.6	100.0
Bay General Hospital	78.5	8.2	1.6	5.1	0.9	0.4	4.6	0.7	-	100.0
Boise Cascade	83.9	12.1	0.5	1.5	0.5	0.0	0.0	1.5	-	100.0
Bumble Bee Seafood	68.8	18.0	1.9	4.9	1.1	2.3	*	*	3.0	100.0
California Clothing	59.8	21.1	5.4	9.4	0.1	0.2	*	*	4.0	100.0
City of San Diego	53.5	23.6	15.1	3.9	0.8	0.1	*	*	3.0	100.0
Federal Building	40.2	19.4	14.1	3.4	0.8	0.2	1.4	0.3	0.0	100.0
Home Federal Savings & Loan	46.4	35.8	10.9	3.6	0.9	0.4	*	*	2.0	100.0
NASSCO	55.7	31.2	4.0	0.0	3.6	3.4	0.7	1.4	0.0	100.0
Naval Air Station - Imperial Beach	63.5	16.0	1.7	6.6	5.0	0.0	*	*	7.2	100.0
Pacific Telephone	36.9	37.7	17.2	6.5	0.3	0.3	*	*	1.1	100.0
San Diego Co. Courthouse	48.7	18.6	22.6	5.2	0.5	2.4	1.4	0.6	0.0	100.0
San Diego Co. Administration	67.2	20.6	7.6	3.0	0.7	0.2	0.7	0.0	0.0	100.0
San Diego Police Department	74.0	12.3	6.2	2.1	4.8	0.0	*	*	1.3	100.0
San Diego Transit Corporation	69.4	10.4	10.6	2.8	5.5	0.0	*	*	1.3	100.0
San Diego Trust & Savings	41.5	20.7	17.6	8.7	0.3	0.0	*	*	11.2	100.0
San Diego Yellow Cab	50.7	4.5	23.9	6.0	4.5	0.0	*	*	10.4	100.0
Southwest Marine	72.00	20.5	1.5	3.0	1.5	0.0	*	*	1.5	100.0
Wickes Corporation	69.7	11.9	14.7	2.8	0.0	0.0	*	*	0.9	100.0
12nd St. Naval Station	67.1	21.0	2.2	3.3	3.7	0.0	*	*	2.6	100.0
Total	60.3	22.3	7.9	4.3	2.1	0.5	0.4	0.2	2.0	100.0

*Walking and bicycling

SOURCE: Commuter Computer.

Boise Cascade, Bay General Hospital, and Southwest Marine have the highest percentage of single occupant vehicle commuters in the study area. These employers are located close to LRT stations.

Carpoolers and vanpoolers account for almost one-quarter of all commuters. Businesses with the highest percentage of personnel commuting by carpools are Pacific Telephone, Home Federal Savings and Loan, the Federal Building, and NASSCO. The location of the employer does not appear to be as significant a factor when selecting commute mode as does the type of employment.

ON-STREET PARKING IN STATION AREAS

A major impact of BART and other rail transit systems has been overflow parking on residential and commercial streets surrounding the transit stations. To monitor this potential impact, an inventory of parking on streets surrounding the suburban Trolley stations was made in July, 1981, one week prior to Trolley operations. This inventory was taken during the mid-day (10:00 AM - 4:00 PM) on a Thursday. Data from this inventory is contained in unpublished Appendix XIV.

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CHAPTER 5
LAND USE, SOCIAL AND ECONOMIC CHARACTERISTICS

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Land Use, Social and Economic Characteristics

The South Bay corridor contains some of the oldest development in the San Diego region. National City began to develop in the late 19th Century as a railroad terminal, about the same period in which downtown San Diego began to develop. The tidelands, or bay front area, to the west of the light rail alignment contains a significant amount of the region's manufacturing activities. Commercial and residential areas are located to the east of the Trolley line. Profiles for each of the communities within the corridor are shown in Appendix VII.

LAND USE

Land use data was collected from April 1980 aerial photographs, and is summarized in Table 43. The primary land use is residential (31.2%) followed by agricultural (13.3%) and manufacturing (12.7%). Because the study area is skewed to take in a large part of Otay Mesa, which is largely undeveloped, agriculture accounts for a large share of the corridor land use.

EMPLOYMENT

The following employment information is based on the SANDAG 1978 Base Year data. Employment data for 1980 is currently being finalized. In 1978, a total of 21.2% of the region's work force was employed in the study area. Table 44 shows that the largest concentration of employees are located in the Centre City area and in the northern half of the Trolley service area.

The major categories of employment in the study area are: military, other governmental employment, and manufacturing. Table 45 shows that 18.8% of those employed are in the military. Local governments and retail trade each employ 12% of the workers. The vocational breakdown varies from community to community.

TABLE 43

1980 LAND USE ACREAGE
Guideway Corridor

Land Use		Total Acres	% of Total
Residential		7,550.65	31.2%
. Spaced Residential-(Rural Lots 2.0 Acres or More)	298.58		
. Single Family Dwelling-Detached	5,574.20		
. Mobile Home Parks	474.18		
. Multi-Family Dwelling-(Duplex, Apt., Condominium)	1,155.49		
. Multi-Family Dwelling-(Military)	42.20		
Agriculture		3,238.44	13.3%
. Intensive Crops Agriculture-(Truck Crop and Nursery Stocks)	416.78		
. Intensive Animal Agriculture-(Dairies and Chickens)	43.05		
. Field Crops-(Grain, Pasture, Fallow)	2,778.61		
Manufacturing		3,092.48	12.7%
. Heavy Industrial-(Machinery, Shipbuilding, Aircraft Engines & Parts)	407.24		
. Light Industrial-(Electrical, Fabricated Products & Food Processing)	1,540.12		
. Industrial - Extractive	1,145.12		
Federal Reservations		2,887.92	11.9%
Transportation and Utilities		2,810.01	11.6%
. Transportation	2,586.06		
. Utilities (including communications)	223.66		
Commercial		2,282.28	9.4%
. Shopping Centers	173.62		
. Strip or Other Retail/Wholesale, Professional Services	2,108.66		
Public and Quasi-Public		1,078.80	4.4%
. Higher Education-(Universities, Colleges & Junior Colleges)	32.88		
. High Schools	250.19		
. Junior High Schools	169.46		
. Elementary Schools (includes Kindergartens)	295.93		
. Government Services and Centers	252.25		
. Health Care Services	14.19		
. Other-(Churches and Cemeteries)	42.70		
. Military Schools	21.20		
Water Areas		627.31	2.7%
. Reservoirs, Lakes, Bays, and Lagoons			
Wildlands		260.09	1.5%
. State Parks			
Recreational and Open Space		318.27	1.3%
. Golf Courses	28.43		
. Local Parks-(County and City)	243.63		
. Commercial Use of Open Space-(Fairgrounds, Race Tracks, Stadiums)	46.21		
TOTAL		24,276.25	100.0%

SOURCE: 1980 Land Use Inventory.

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TABLE 44

TOTAL EMPLOYMENT
(1978 Estimate)

Community	Number	Percent of Total Study Area	Percent of Total San Diego Region
Centre City	55,023	35.5	7.5
Barrio Logan	42,920	27.7	5.9
National City	21,875	14.1	3.0
Chula Vista	16,774	10.8	2.3
Otay	5,943	3.8	0.8
Palm City/Nestor	1,672	1.1	0.2
San Ysidro	5,261	3.4	0.7
Imperial Beach	5,673	3.6	0.8
Total	155,141	100.0	21.2

SOURCE: SANDAG, 1978 Estimates.

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TABLE 45

EMPLOYMENT BY STANDARD INDUSTRIAL CLASSIFICATION
1980 Estimate
(Percent of Total)

SIC	Centre City	Barrio Logan	National City	Chula Vista	Otay	Palm City/ Nestor	San Ysidro	Imperial Beach	South Bay Corridor
Agriculture	0.6	0.7	0.4	0.4	5.4	12.0	4.5	0.8	1.0
Construction	1.5	1.8	3.0	1.8	2.9	15.5	7.6	6.3	2.3
Manufacturing:									
Non-Durable	3.4	4.0	4.0	0.3	27.8	6.8	0.6	0.1	3.8
Durable	3.0	18.6	6.1	57.9	4.8	0.2	0.1	0.4	11.7
Transportation, Utilities	8.5	3.2	2.7	2.0	1.0	2.8	4.5	0.5	5.2
Wholesale Trade	6.3	5.1	4.0	1.4	2.1	5.2	1.6	0.7	4.9
Retail Trade	12.9	3.5	17.7	17.9	24.5	17.0	21.3	31.3	12.1
Finance, Insurance, Real Estate	15.9	0.3	2.0	2.4	4.5	0.7	4.7	4.7	7.3
Services	23.6	6.0	9.0	8.2	10.8	12.7	11.0	16.0	14.2
Government:									
Federal, Civilian	5.9	9.1	1.2	0.2	0.0	0.2	16.0	2.8	5.9
Military	1.1	41.1	43.0	0.0	0.0	0.0	0.0	0.0	18.8
State	1.4	0.4	0.1	1.2	0.5	0.1	0.7	0.0	0.8
Local	15.9	6.2	6.8	6.3	15.7	26.8	27.4	36.4	12.0
Total:	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Series V Population and Employment Projection.

LAND VALUES

The profile of land values in the study area is based upon land parcel appraisals gathered by the Metropolitan Transit Development Board during 1978 and 1979. An inventory of land values is included in Appendix VIII. A sales inventory of properties in the census tracts adjoining the LRT is contained in the unpublished Appendix XV, available at the SANDAG and MTDB offices. During 1978 and 1979, MTDB purchased several land parcels for the construction of the light rail transit line. Most of the land acquisitions are located around the LRT station sites. The land parcels' appraisals were used to determine the fair market value based upon property listings and sales at the time of the MTDB purchase. This information is contained in Appendix VI.

HOUSING COSTS

Residential construction activity slowed in 1980 primarily because of increases in home mortgage costs. However, data collected for Development Dimensions Research by California-World Title Companies shows that San Diego County's inventory of unsold tract housing remained relatively stable during that year. Table 46 shows that in December 1979, there were 521 unsold single-family units in the study area.

TABLE 46

UNSOLD SINGLE-FAMILY UNITS
December, 1979

Area	Under Construction		Completed		Total
	Detached	Attached	Detached	Attached	
National City	30	66	—	1	97
Chula Vista/Otay	112	21	6	4	143
Imperial Beach/ South San Diego	189	36	37	19	281
Total	331	123	43	24	521

SOURCE: See text

Data on average sale prices for the San Diego region were gathered by the Economic Research Bureau of the Chamber of Commerce. Table 47 shows that median housing prices in 1980 range from $39,570 in Barrio Logan to $79,066 in Chula Vista. The regional average was $104,205 for a single-family home. Thus, the median housing costs in the study area were at least 24% lower than the regional average.

TABLE 47

AVERAGE SINGLE FAMILY SALE PRICE
(January - June, 1980)

Barrio Logan	$ 39,570
National City	56,862
Chula Vista	79,066
Otay	61,497
South San Diego	65,888
Imperial Beach	71,454
San Diego Region	104,205

SOURCE: See text

CENTRE CITY

Because Centre City San Diego is the major terminus of the light rail line and because it is undergoing a significant amount of redevelopment, the pre-trolley characteristics were expanded to include information on occupancy, lease rates and employment. While it will have some impact on Centre City redevelopment, the trolley is not viewed as a major cause of development activity. Rather, the changes now underway in Centre City is expected to have a significant impact on Trolley ridership.

Employment Centers

In 1980, Centre City had more than 40 buildings with over 75,000 square feet of floor space. These buildings are used as private offices, governmental centers, hotels, and residential complexes. The major public and commercial buildings are shown in Table 48 and Figure 12.

TAPLE 48

CENTRE CITY ACTIVITY CENTERS

Figure Number	Building	Approximate Square Feet	Size Floors	Parking Spaces
Private Offices:				
1	Bank of America	182,000	16	370
2	Bank of California Plaza	312,000	18	400
3	California First Bank	210,000	24	370
4	Central Federal Tower	287,000	22	320
5	Centre City Building	81,000	14	-
6	Chamber Building	145,000	23	283
7	Crocker Bank (Wickes)	214,000	25	384
8	Fifth and Broadway Building	85,000	12	-
9	Fox Building	75,000	5	200
10	Harcourt, Brace, Jovanovich	105,000	12	243
11	Home Tower	138,000	18	675
12	San Diego Gas & Electric	325,000	21	N/A
13	San Diego Federal Building	300,000	24	N/A
14	San Diego Trust & Savings	126,000	14	-
15	Security Pacific Plaza	233,000	18	427
16	Spreckles Building	91,000	6	143
17	Title Insurance and Trust	76,000	3	-
18	Union Bank Building	375,000	22	518
Government Buildings:				
	City of San Diego			
19	Civic Theatre	112,000	1	-
20	Convention Facility	170,000	2	-
21	City Administration Building	180,000	14	-
22	City Operations Building	200,000	5	-
23	City Parking/Exhibition Bldg.	75,000	11	1,000
	Other			
24	County Administration Building	285,000	4*	1,150
25	County Court House Annex	85,000	5	-
26	State of California Office Bldg.	140,000	6	78
27	Federal Building	840,000	6	612

*Tower not in use.

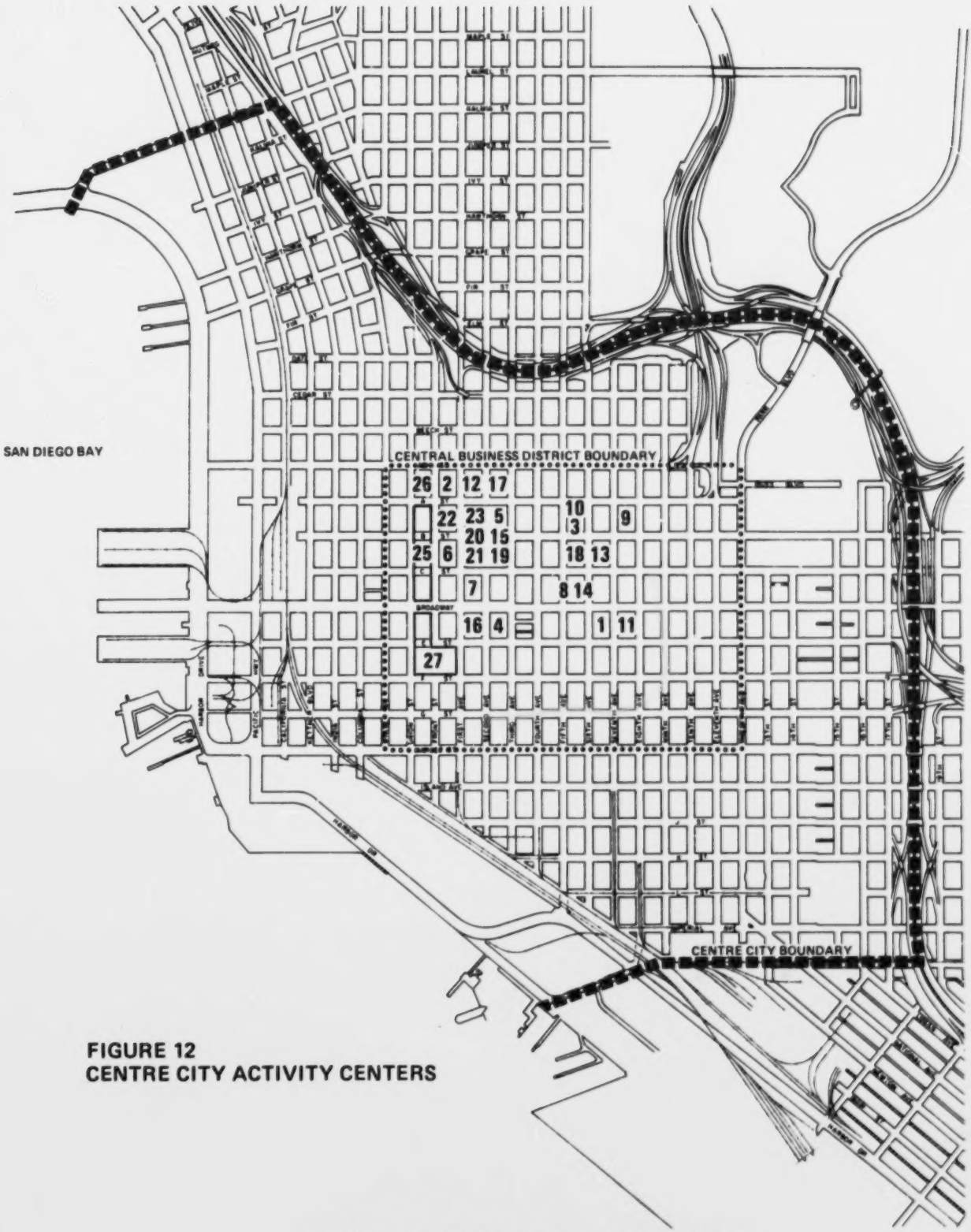

FIGURE 12
CENTRE CITY ACTIVITY CENTERS

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The 18 largest private office buildings supply the region with 2,266,000 square feet of leasable office space. According to a report prepared for the Centre City Development Corporation, Centre City experienced a total absorption rate of about 250,000 square feet of office space in 1977.* Downtown San Diego's vacancy rate dropped from 20% in 1975 to 9.3% in 1980.

Major hotels in Centre City provide more than 1,800 rooms; 14% of the visitor accommodations in the San Diego region. Many hotels in Centre City are used as housing by retired people living on a fixed income. Table 49 shows the major visitor-serving hotels in Centre City.

TABLE 49

MAJOR CENTRE CITY TOURIST HOTELS

Building	Units/Rooms
Grant Hotel	300
Pickwick Hotel	250
Executive Hotel	102
Holiday Inn (Embarcadero)	627
Holiday Inn (Centre City)	206
Westgate Hotel	223
San Diego Hotel	354

Centre City Lease Rates

A survey of the Economic Research Bureau shows that vacant office space in Centre City is decreasing. In May 1979, only 9.3% of the total office space surveyed was available for lease. The average monthly lease rate for this office space was 72 cents per square foot and the median rate was 66 cents. Table 50 shows the downtown office buildings surveyed and their rates. The supply of office space will increase dramatically in 1982 when four major office towers and several other buildings will open for occupancy.

*Gladstone Associates, Analysis of Private Land Use Markets, San Diego Convention Center Project, Los Angeles, June, 1978.

TABLE 50

CENTRE CITY LEASE RATES
February, 1981

Name or Address	Year Built	# of Floors	Net Rentable Sq. Ft.	% Leased	Lease Rates Sq. Ft. per Mo.
Bank of America Bldg.	1927	16	181,973	93%	.54- .85
Bank of California Plaza	1971	18	312,400	98%	.98-1.20
California Theatre Bldg.	1927	8	28,000	(NA, renovation)	
California First Bank Bldg.	1966	24	210,000	100%	.89-1.07
Central Federal Tower	1975	22	287,108	73%	.86-1.57
Centre City Bldg.	1927	14	81,208	89%	.60- .70
*Chamber Building	1963	23	145,000	88%	.78- .98
Dunn Dlg.	(NA)	2	15,000	70%	.50- .55
Fifth & Ash Bldg. (1400 Fifth)	1958	4	24,000	98%	.56- .60
Fifth & Broadway Bldg.	1910	12	85,000	80%	.55- .60
Fox Bldg.	1929	5	75,000	95%	.60- .75
Gaslamp Plaza/Jeweler's Exchange	1913	12	38,000	88%	.36- .46
Granger Bldg.	1904	5	24,000	98%	.20- .25
Harcourt, Brace Bldg.	1918	12	104,000	75%	.55- .70
Home Tower Bldg.	1961	18	138,000	100%	.75- .85
Independent Bldg.	1911	4	28,000	97%	.35- .55
John Hancock Bldg.	1972	3	18,600	100%	.70- .78
Keating Bldg.	1890	5	20,000	85%	.20- .80
Lloyds Bank	1961	4	32,000	74%	.65
Milford Bldg.	1976	2	12,000	(NA)	.68
San Diego Federal Savings	1974	24	300,000	97%	.98-1.30
San Diego Trust & Savings	1928	14	126,000	100%	.50- .60
Scripps Bldg.	1907	6	25,800	86%	.45- .60
Security Pacific Plaza	1972	18	233,200	96%	.90-1.24
Sixth & Broadway Bldg.	1924	4	40,000	(NA, renovation)	
Spreckels Bldg.	1912	6	90,759	38%	.39- .80
State & Beech Bldg.	1971	2	23,000	63%	.70- .76
Sunset Bldg.	1920	3	26,000	75%	.50- .65
Title Insurance Bldg.	1959	3	76,000	88%	.65- .75
Travelator Bldg.	1961	4	30,000	90%	.50- .65
Union Bank Bldg.	1969	22	375,000	99%	(NA)
Wickes Bldg.	1963	25	214,000	92%	.85-1.35
111 Elm Street	1970	4	25,000	100%	.85- .90
*620 'C' Street Bldg.	1929	6	68,860	83%	.65- .95
*635 'C' Street Bldg.	1925	5	50,050	60%	.50- .65
861 Sixth Avenue Bldg.	1907	8	65,470	100%	.50 up
1400 Sixth Avenue Bldg.	1960	5	33,000	100%	.76

*Located on 'C' Street.

SOURCE: Economic Research Board, San Diego Economic Bulletin, July, 1979.

SOCIOECONOMIC CHARACTERISTICS

The socioeconomic characteristics of the South Bay corridor are significantly different than the region as a whole. Because of the strong military presence, the population in the study area is younger and contains a larger percentage of males than the region as a whole. The area also contains a high percentage of racial and ethnic minorities. Both income and the cost of housing in the corridor are lower than in the rest of the region.

Sex and Age Distribution

Females comprise 50.6% of the total population of San Diego County, whereas females account for 49.2% of the residents of the LRT study area. The distribution varies among communities. Residents of the study area tend to be younger than the population of San Diego County. More than 50% of the study area is under 25 years old, as shown in Table 51. Countywide, less than 40% of the residents fall into this age bracket.

TABLE 51

AGE DISTRIBUTION
1980

Community	0-17	18-24	25-59	Over 60
Centre City	4.8%	16.3%	48.7%	30.2%
Barrio Logan	35.2%	18.7%	35.1%	11.0%
National City	26.1%	29.6%	35.0%	9.3%
Chula Vista	21.3%	17.0%	40.9%	20.8%
Otay	25.2%	17.8%	39.2%	17.8%
Palm City/Nestor	36.1%	13.6%	43.5%	6.8%
San Ysidro	41.4%	11.9%	40.5%	6.2%
Imperial Beach	31.6%	21.7%	40.1%	6.6%
Corridor	30.1%	18.5%	39.6%	11.4%
Region	25.5%	16.9%	43.2%	14.4%

SOURCE: 1980 Census

Transportation-Handicapped Persons

In 1980, it is estimated that nearly 8,000 persons in the study area were unable to use conventional transit or had severe difficulties using transit. As shown in Table 52 the study area is estimated to have a smaller percentage of transportation-handicapped residents than the region as a whole.

TABLE 52

TRANSPORTATION-HANDICAPPED PERSONS
1980 Estimate

	Individuals	% of Regional Handicapped	% of Community Population
Centre City	900	1.0%	9.7%
Barrio Logan	1,000	1.1%	4.4%
National City	970	1.1%	3.4%
Chula Vista	1,200	1.3%	5.1%
Otay	900	1.0%	3.7%
Palm City/Nestor	850	0.9%	3.5%
San Ysidro	1,100	1.2%	3.2%
Imperial Beach	800	0.9%	3.5%
Corridor	7,700	8.4%	4.1%

SOURCE: SANDAG, Elderly and Handicapped Data Collection Study.

Household Income

Data on household income are based on Zones for Analysis and Planning. (The Zones extend beyond the study area limits in Barrio Logan, National City and Chula Vista.) Table 53 shows that the median household income was $14,129 for the San Diego region in 1980. Within the LRT study area, no community has a median household income as high as that of the region. Centre City and Barrio Logan report the lowest median household incomes in the light rail corridor.

TABLE 53

MEDIAN HOUSEHOLD INCOME
(1980 Estimate)

Jurisdiction	Income
San Diego Region	$14,129
Centre City	4,102
Barrio Logan	6,515
National City	9,883
Chula Vista	11,623
Otay	11,253
Palm City/Nestor	13,535
San Ysidro	6,548
Imperial Beach	11,263

Racial and Ethnic Background

A total of 81.3% of the residents of San Diego County are White, compared to only 64% of the study area population. Table 54 shows that almost one-fifth of the residents of the study area identified themselves as "Other." An additional 9.3% reported an Asian background. Hispanics comprise 41.3% of the total population in the study area, compared to less than 15% regionwide. Racial and ethnic distribution varies considerably among the study area communities.

TABLE 54

RACE AND ETHNICITY
1980

Community	White	Black	Asian	Other	Hispanic
Centre City	74.8	8.9	3.3	13.0	24.5
Barrio Logan	40.7	23.3	3.5	32.5	62.5
National City	59.3	8.6	10.4	21.7	39.5
Chula Vista	82.4	2.4	4.0	11.2	25.8
Otay	75.2	3.4	4.8	16.6	38.4
Palm City/Nestor	66.0	2.9	15.0	16.1	35.8
San Ysidro	52.5	3.5	17.1	26.9	55.8
Imperial Beach	79.6	2.9	7.0	10.5	21.3
Corridor	64.8	6.6	9.1	19.5	39.9
Region	81.3	5.6	4.8	8.3	14.8

SOURCE: 1980 Census

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CHAPTER 6
BUSINESS IMPACTS

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Business Impacts

THE COMMERCIAL-RETAIL SURVEY

The Commercial-Retail Survey was conducted to provide information concerning economic changes which might occur because of the construction and operation of the San Diego Trolley.

The areas surveyed are located along the route of the San Diego Trolley. These areas include:

- C Street, Centre City
- 12th Avenue, Centre City
- 24th Street and Wilson Avenue, National City
- H Street, Chula Vista
- San Ysidro Boulevard, San Ysidro

The surveys were conducted during April and May of 1980. Surveys were distributed to 132 businesses located in the study area. A total of 84.9% of the survey forms were completed. Table 55 shows the distribution and return rate of the surveys.

TABLE 55

BUSINESS SURVEY DISTRIBUTION

Location	Percent Completed	Number Distributed
C Street	83.6%	61
12th Avenue	87.1%	31
24th & Wilson	60.0%	5
H Street	83.0%	24
San Ysidro Blvd.	100.0%	11

Methodology

The survey form was designed to acquire data on the business characteristics, as well as the attitude of each proprietor towards the construction and operation of the San Diego Trolley. Each survey form was distributed

by a surveyor to the owner or manager of the business. The surveyor left the form at the business and collected it at a pre-arranged time.

At the time of the survey, San Diego Trolley construction activities were in progress on 12th Avenue. Portions of the street were torn up or blocked off and construction equipment was present at the site. Vehicle and pedestrian access in the area was disrupted. Thus, the response of the impacted businesses on 12th Avenue can be compared to the non-impacted businesses at other sites. Also, the five businesses located at 24th Street and Wilson Avenue were newly opened. They are located in a new shopping center in National City's redevelopment area.

Business Characteristics

More than 13% of the businesses surveyed operate on a 24-hour basis. One-third of the businesses open between 8:00 AM and 9:00 AM and an additional 23.6% opened between 9:00 AM and 10:00 AM. Almost 34% of the businesses closed between 5:00 PM and 6:00 PM, with another 18.8% closing between 6:00 PM and 7:00 PM.

There is an average of 12 employees per business in the study area. Table 56 shows that one-half of the businesses employed fewer than nine people. Only 5.9% of the businesses had more than 40 employees.

TABLE 56

BUSINESS SURVEY: SIZE OF EMPLOYERS

Number of Employees	Number of Sites Surveyed	% of Total Sites
1-5	51	45.5
6-10	23	20.8
11-24	17	14.9
25-40	14	12.9
Over 40	7	5.9
Total	112	100.0

Table 57 shows the range of square footage occupied by the businesses. More than one-half of the businesses cover 2,500 square feet or less. The average business occupies 7,000 square feet. However, almost 4% of the establishments cover more than 25,000 square feet. Almost 60% of the businesses did not have on-site parking.

TABLE 57

BUSINESS SURVEY: SQUARE FOOTAGE
OF BUSINESS ESTABLISHMENTS

Square Feet	Number Surveyed	% of Total
100-1,000	30	26.4
1,001-2,500	28	25.0
2,501-5,000	22	19.7
5,001-10,000	16	14.5
10,001-25,000	12	10.5
Over 25,000	4	3.9
Total	112	100.0

Only 20.8% of the businesses own the property they occupy. The other lease or rent their establishment. Monthly rental fees range from $150 to over $5,000 per month. The average monthly rental fee is $1,250. However, 50% of the businesses paid $800 or less per month.

The average length of stay at their present location was ten years. More than 11% of the businesses have been at the same location for more than 20 years. However, 17% of the businesses have been at the current location less than one year.

The average taxable sales were recorded at $1,890,000 per year. However, the median annual taxable sales were $165,000.

Attitudinal Survey

A major component of the Commercial-Retail Survey was to determine the impact of the construction and operation of the light rail transit system on the businesses located along the route. The survey posed a number of questions to those businesses to determine their attitudes and personal comments on the guideway system.

Only 2% of the businesses surveyed stated that the San Diego Trolley was important to them locating at their current address. None of the businesses along 12th Avenue selected their location because of the LRT.

However, many of the businesses said that the LRT is important to them remaining at their current address. More than 17% of the 12th Avenue businesses and 24% of all businesses expressed the importance of the guideway system to their businesses.

Table 58 shows the various attitudes towards the impacts of construction. This table shows that the impacts of construction on the 12th Avenue businesses were more severe than anticipated by those business located in other areas. Almost 63% of the 12th Avenue businesses experienced a loss of taxable sales, retail trade, or services, whereas only 41.7%

of the non-impacted businesses anticipated a decrease in business. Surprisingly, 4.2% of the 12th Avenue merchants experienced an increase in business. Almost 10% of the non-impacted merchants anticipated an increase in business during construction.

TABLE 58

BUSINESS SURVEY:
IMPACTS OF CONSTRUCTION

During the construction of the Light Rail Transit Line
are you experiencing an INCREASE OR DECREASE
in your business?

	INCREASE		DECREASE		NO CHANGE	
	12th Ave.	Other Sites	12th Ave.	Other Sites	12th Ave.	Other Sites
Total taxable sales, retail trade, or services	4.2	9.7	62.5	41.7	33.3	48.6
Total number of employees	-	4.0	29.2	14.7	70.8	81.3
Total amount of floor space	-	2.6	-	1.3	100.0	96.1
Hours open for business	-	2.7	12.5	2.7	87.5	94.6
Amount of available parking	4.1	1.4	54.5	26.0	45.5	72.6
Interference with deliveries and pick-ups	66.7	34.7	-	8.0	33.3	57.3

More than 29% of the 12th Avenue businesses laid off employees during the construction phase. Almost 15% of the non-impacted merchants anticipated that they may have to do the same. However, the vast majority of businesses either experienced or anticipated no change in their employee count.

None of the 12th Avenue businesses experienced a loss of floor space due to construction. However, 54.5% of the impacted businesses did lose some available parking. Almost 96% of the non-impacted businesses anticipated no change in the total amount of floor space. However, 26% of the non-impacted merchants anticipated a loss of available parking.

Most businesses did not experience or anticipate a loss of business hours due to construction activities. However, 12.5% of the 12th Avenue merchants did shorten their business hours. Fewer than 3% of the non-impacted businesses anticipated that such an action would be necessary.

Almost two-thirds of the businesses on 12th Avenue stated that construction activities interfered with business deliveries and pick-ups. More than 34% of the non-impacted businesses anticipate this type of interference.

As shown in Table 59, most businesses anticipated that there will be no change in their business once the San Diego Trolley was operating. More than 14% of the impacted businesses anticipated increased sales, retail

trade or services. At other survey areas, 45.6% of the merchants felt that their business will increase. However, 28.6% of the businesses located on 12th Avenue anticipated a loss of business.

Most businesses do not anticipate any change in their employment figures. More than 17% of the non-impacted businesses anticipate an increase in personnel. Only 14.3% of the impacted businesses expect a decrease in personnel.

However, many businesses do anticipate a reduction in available parking and interference with business deliveries and pick-ups. Parking losses are expected by 54.5% of the 12th Avenue merchants and 25% of the non-impacted businesses. A higher percentage of the non-impacted business than those located along 12th Avenue anticipated interference with deliveries and pick-ups.

TABLE 59

BUSINESS SURVEY:
EXPECTED IMPACTS OF TROLLEY OPERATIONS

	INCREASE		DECREASE		NO CHANGE	
	12th Ave.	Other Sites	12th Ave.	Other Sites	12th Ave.	Other Sites
Total taxable sales, retail trade or services	14.3	45.6	28.6	4.4	57.1	50.0
Total number of employees	-	17.6	14.3	2.9	85.7	79.5
Total amount of floor space	-	2.9	-	-	100.0	97.1
Hours open for business	-	7.4	-	-	100.0	92.6
Amount of available parking	-	2.9	54.5	25.0	45.5	72.1
Interference with deliveries and pick-ups	15.0	25.0	-	4.4	85.0	70.9
Cost per square foot of floor area	-	25.0	-	1.5	100.0	73.5

Numerous comments were received on the San Diego Trolley. While many of the respondents anticipate that the trolley will help their businesses, many businesses also noted that the construction activities have caused a decrease in their businesses. Some respondents stated that communication between MTDB and the businesses was poor.

DETAILED EXISTING CONDITIONS (WINDSHIELD SURVEY)

In order to document conditions along the Trolley right-of-way in Centre City and around suburban stations, a windshield survey of conditions will be conducted at approximately six-month intervals. Conditions which were recorded include abandoned or vacant property, construction and redevelopment projects, and changes to the transportation system, as well as any other factors which might be or will have an impact on the guideway system. The windshield survey was initially conducted on Friday, January 9, 1981. These surveys are contained in unpublished Appendix XVI.

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APPENDIX I
STUDY AREA CENSUS TRACTS

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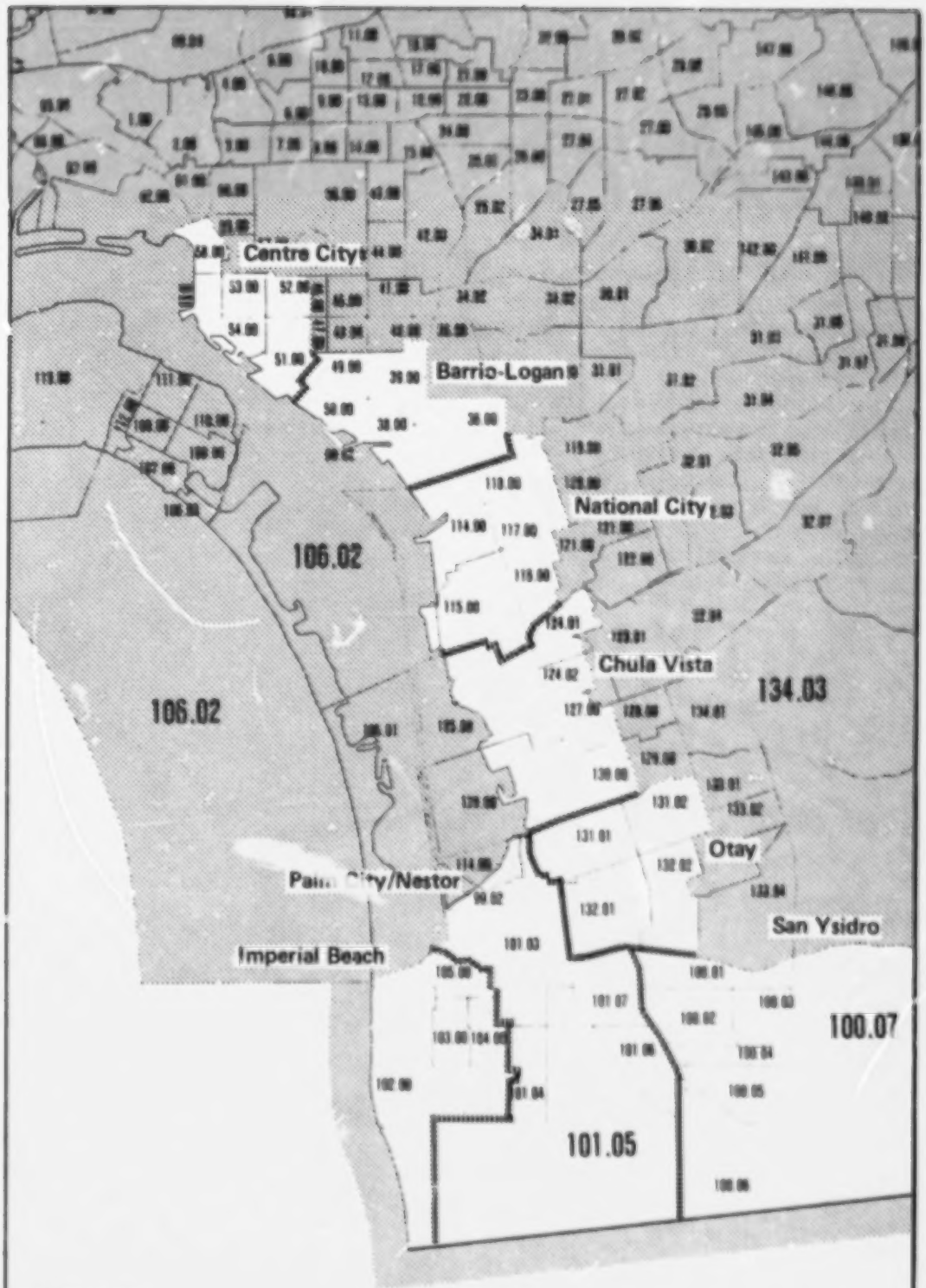
Study Area Census Tracts

The San Diego Trolley route and study area crosses eight different communities. Four of these communities - Centre City, Barrio Logan, Palm City/Nestor, and San Ysidro - are within the jurisdictional boundaries of the City of San Diego. The remaining communities are the Cities of National City, Chula Vista, and Imperial Beach, as well as the unincorporated area of Otay. Except for the San Ysidro area, impact area boundaries were determined by MTDB and SANDAG staffs. Much of the data available for San Ysidro is based upon a single large 1970 census tract, 100.00. The 1980 revisions did not improve this situation. This census tract exceeds the LRT impact area limits. However, much of the census tract is agricultural or open space and the urbanized portion lies within the impact area. Listed below are the study area communities and their 1970 and 1980 census tracts:

	Census Tracts	
Community	1970	1980
Centre City	52.00/53.00 54.00/56.00 58.00	Unchanged
Barrio Logan	36.00/38.00 39.00/49.00 50.00/51.00	Unchanged
National City	114.00/115.00 116.00/117.00 118.00	Unchanged
Chula Vista	124.01/124.02 125.00/126.00 127.00/130.00	124.01/124.02A* 125.00/126.00 127.00A*/130.00
Otay	131.01/131.02 132.01/132.02	Unchanged
Palm City/Nestor	101.01/101.02	101.03/101.04/101.05 101.06/101.07
San Ysidro	100.00	100.01 through 100.07
Imperial Beach	102.00/103.00 104.00/105.00	Unchanged

*Indicates a boundary adjustment only.



APPENDIX I
SOUTH BAY TRANSIT CORRIDOR
1980 CENSUS TRACTS

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APPENDIX II
TRANSIT ROUTE DATA

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Transit Route Data

Based on the Passenger Counting Program data, a profile of each route serving the study area is shown on the following pages. The configuration of these routes is shown on Figure 6. The data shown is for the entire route, not just those portions within the study area.

San Diego Transit Corporation: Routes 3, 9, 29, 32, 33, 51, 100.

San Diego Transit Corporation operates seven routes in the non-Centre City portion of the study area. These routes generate 25.6% of the total annual passengers and 25.9% of the total revenue passengers within the SDTC system.

Strand Express Agency: Route 170.

This route serves the southern part of the study area.

National City Transit: Routes 601, 602, 603, 604.

All four NCT routes serve the study area.

Chula Vista Transit: Routes 701, 702, 703, 704, 705, 706, 707.

All seven routes operated by CVT serve the study area.

ROUTE 3

Provides local service between older northern and eastern residential areas via Centre City. The route travels along Market Street and Ocean View Boulevard in the study area. Buses operate every day between the hours of 4:45 AM and 12:50 AM. During the AM peak, midday, and PM peak, buses operate every 20 minutes. During the evening there are 30-minute headways. Seven buses are required to provide service along the 10.3 mile route.

Route Data

Scheduled Miles	388,991	
Total Revenue Passengers	1,475,916	
Total Annual Passengers	1,801,326	
Basic Fare Riders	849,673	47%
Cash Student Riders	43,364	2%
Cash Senior Riders	144,417	8%
All Saverpass Riders	438,462	24%
Transfer Riders	325,410	18%
Average Fare	.399	

Performance Data

Number of Trips	91
Total Passengers	6,878
Passengers per Trip	76
Passengers per Trip/Average Max. Load	2.08
Percent of Trips Over Capacity	11.0
Revenue Miles	892
Passengers per Revenue Mile	7.7
Revenues Miles Over Capacity	11.3
% of Revenue Miles of Capacity	1.3
Passenger Miles	14,316.5
Average Trip Length in Miles	2.1
Passenger Miles per Trip	157.3
Revenue Hours	78.45
Passenger per Revenue Hours	88
Passenger Hours	1,318.16
Average Trip Length in Minutes	11.50
Gallons of Fuel Used	360.37
Passenger Miles per Gallon of Fuel	39.7
Passenger Miles per Seat Mile	0.25

ROUTE 9

Provides local service between northern residential/beach areas and Coronado via Centre City, Barrio Logan and the Coronado Bay Bridge. Coronado contracts for 30.7% of this route. Buses operate at 30 minute headways during the day and at 60 minute headways in the evening. Buses operate every day. Operating hours are between 5:00 AM and 3:20 AM. Seven buses are required to serve the 20.5 line miles.

Route Data

Scheduled Miles	359,998	
Total Revenue Passengers	1,482,437	
Total Annual Passengers	1,808,979	
Basic Fare Riders	1,122,918	62%
Cash Student Riders	11,488	6%
Cash Senior Riders	91,300	5%
All Saverpass Riders	256,731	14%
Transfer Riders	326,542	18%
Average Fare	.439	

Performance Data

Number of Trips	75
Total Passengers	5,176
Passengers per Trip	69
Passengers per Trip/Average Max. Load	1.86
Percent of Trips Over Capacity	18.7
Revenue Miles	1,356.1
Passengers per Revenue Mile	3.8
Revenue Miles Over Capacity	51.7
% of Revenue Miles of Capacity	3.8
Passenger Miles	27,478.8
Average Trip Length in Miles	5.3
Passenger Miles per Trip	366.4
Revenue Hours	86.57
Passenger per Revenue Huors	60
Passenger Hours	1,783.1
Average Trip Length in Minutes	20.67
Passenger Minutes per Trip	1,426.5
Percent Slow at Time Points	21.6
Percent Fast at Time Points	10.6
Gallons of Fuel Used	339.88
Passenger Miles per Gallon of Fuel	80.8
Passenger Miles per Seat Mile	0.397

ROUTE 29

Provides local service between western residential/beach areas and Otay Mesa via Centre Cite, National City, and Chula Vista. Buses serve the 32nd Street Naval Station. 41.5% of this route is contracted for by Chula Vista, National City, and San Diego County. Buses operate daily between 4:27 AM and 1:37 PM. AM peak and PM peak headways are 15 minutes. Midday headway is 30 minutes. During the evening buses operate on 60 minute headways. Peak periods require eight buses and base periods require seven buses to provide service along the 22.4 mile line. This route parallels the Trolley within the corridor.

Route Data

Scheduled Miles	701,665	
Total Revenue Passengers	1,953,132	
Total Annual Passengers	2,392,276	
Basic Fare Riders	1,609,092	67%
Cash Student Riders	33,203	1%
Cash Senior Riders	94,539	4%
All Saverpass Riders	216,298	9%
Transfer Riders	439,144	18%
Average Fare	.459	

Performance Data

Number of Trips	88
Total Passengers	7,532
Passengers per Trip	95
Passengers per Trip/Average Max. Load	2,07
Percent of Trips Over Capacity	28.4
Revenue Miles	1,717.8
Passengers per Revenue Mile	4.4
Revenue Miles Over Capacity	85.9
% of Revenue Miles of Capacity	5.0
Passenger Miles	36,655.9
Average Trip Length in Miles	4.9
Passenger Miles per Trip	416.5
Revenue Hours	111.63
Passenger per Revenue Hours	67
Passenger Hours	2,469.98
Average Trip Length in Minutes	19.68
Passenger Minutes per Trip	1,648.08
Percent Slow at Time Points	48.9
Percent Fast at Time Points	11.7
Gallons of Fuel Used	430.08
Passenger Miles per Gallon of Fuel	85.2
Passenger Miles per Seat Mile	0.419

ROUTE 32

Provides local service between Centre City and the International Border via National City and Chula Vista. 27% of this route is contracted for by National City, Chula Vista, and San Diego County. Service is provided on a daily basis. Weekdays, buses operate between 4:55 AM and 1:53 AM at 15 minute headways. Evening headways are 60 minutes. Peak hour service requires 16 buses and base period service required 14 buses to travel the 18.5 mile route. The trolley route is a revised configuration of Route 32.

Route Data

Scheduled Miles	919,845	
Total Revenue Passengers	3,227,414	
Total Annual Passengers	3,862,470	
Basic Fare Riders	2,663,225	69%
Cash Student Riders	46,350	1%
Cash Senior Riders	201,125	5%
All Saverpass Riders	316,714	8%
Transfer Riders	635,056	16%
Average Fare	.459	

Performance Data

Number of Trips	108
Total Passengers	11,330
Passengers per Trip	104
Passengers per Trip/Average Max. Load	1.86
Percent of Trips Over Capacity	25.9
Revenue Miles	1,892.8
Passengers per Revenue Mile	6.0
Revenue Miles Over Capacity	208.2
% of Revenue Miles of Capacity	11.0
Passenger Miles	77,768.6
Average Trip Length in Miles	6.9
Passenger Miles per Trip	720.1
Revenue Hours	143.98
Passenger per Revenue Hours	79
Passenger Hours	6,008.95
Average Trip Length in Minutes	31.82
Passenger Minutes per Trip	3,338.31
Percent Slow at Time Points	37.4
Percent Fast at Time Points	16.9
Gallons of Fuel Used	881.54
Passenger Miles per Gallon of Fuel	88.2
Passenger Miles per Seat Mile	0.599

ROUTE 33

Provides shuttle service between Imperial Beach and Otay Mesa via Palm City/Nestor. Imperial Beach contracts for 19.3% of this route. The buses operate daily. On weekdays, buses operate between 5:20 AM and 11:02 PM at 30 minute headways. Two buses are required to serve the 7.2 mile route.

Route Data

Scheduled Miles	157,648	
Total Revenue Passengers	178,197	
Total Annual Passengers	269,450	
Basic Fare Riders	128,143	48%
Cash Student Riders	12,420	4%
Cash Senior Riders	11,683	4%
All Saverpass Riders	25,951	10%
Transfer Riders	91,253	34%
Average Fare	.449	

Performance Data

Number of Trips	17
Total Passengers	539
Passengers per Trip	31
Passengers per Trip/Average Max. Load	2.21
Percent of Trips Over Capacity	11.8
Revenue Miles	228.9
Passengers per Revenue Mile	2.4
Revenue Miles Over Capacity	6.1
% of Revenue Miles of Capacity	2.8
Passenger Miles	1,719.6
Average Trip Length in Miles	3.2
Passenger Miles per Trip	101.2
Revenue Hours	12.13
Passenger per Revenue Hours	44
Passenger Hours	92.58
Average Trip Length in Minutes	10.31
Passenger Minutes per Trip	6.25
Percent Slow at Time Points	-
percent Fast at Time Points	-
Gallons of Fuel Used	33.64
Passenger Miles per Gallon of Fuel	51.1
Passenger Miles per Seat Mile	0.255

ROUTE 51

Provides shuttle service between Otay Mesa and the International Border. Buses operate on weekdays between 5:15 AM and 7:07 PM at 60 minute headways. One bus is required to provide service along the 7.8 mile route.

Route Data

Scheduled Miles	67,601	
Total Revenue Passengers	48,616	
Total Annual Passengers	58,861	
Basic Fare Riders	29,032	49%
Cash Student Riders	6,698	11%
Cash Senior Riders	8,359	14%
All Saverpass Riders	4,527	8%
Transfer Riders	10,245	17%
Average Fare	-	

Performance Data

Number of Trips	14
Total Passengers	288
Passengers per Trip	20
Passengers per Trip/Average Max. Load	2.2
Percent of Trips Over Capacity	7.1
Revenue Miles	212.5
Passengers per Revenue Mile	1.4
Revenue Miles Over Capacity	0.5
% of Revenue Miles of Capacity	0.2
Passenger Miles	985.6
Average Trip Length in Miles	3.4
Passenger Miles per Trip	70.4
Revenue Hours	11.12
Passenger per Revenue Hours	26
Passenger Hours	51.8
Average Trip Length in Minutes	10.79
Passenger Minutes per Trip	221.9
Percent Slow at Time Points	13.4
Percent Fast at Time Points	19.6
Gallons of Fuel Used	24.98
Passenger Miles per Gallon of Fuel	39.5
Passenger Miles per Seat Mile	0.197

ROUTE 100

Provides express service between Centre City and Imperial Beach via Chula Vista and Palm City/Nestor. Buses operate weekdays between 5:47 AM and 8:04 PM. AM peak and PM peak headways are 30 minutes, midday headway is 60 minutes. Peak periods require four buses and base periods require two buses to serve the 14.3 mile route. This route was replaced by the Trolley.

Route Data

Scheduled Miles	179,571	
Total Revenue Passengers	170,492	
Total Annual Passengers	214,842	
Basic Fare Riders	123,530	57%
Cash Student Riders	2,263	1%
Cash Senior Riders	10,210	5%
All Saverpass Riders	34,489	16%
Transfer Riders	44,350	21%
Average Fare	.683	

Performance Data

Number of Trips	42
Total Passengers	1,059
Passengers per Trip	25
Passengers per Trip/Average Max. Load	1.1
Percent of Trips Over Capacity	7.1
Revenue Miles	602.7
Passengers per Revenue Mile	1.8
Revenue Miles Over Capacity	11.9
% of Revenue Miles of Capacity	2.0
Passenger Miles	8,841.0
Average Trip Length in Miles	8.3
Passenger Miles per Trip	210.5
Revenue Hours	31.45
Passenger per Revenue Hours	34
Passenger Hours	-
Average Trip Length in Minutes	-
Passenger Minutes per Trip	-
Percent Slow at Time Points	-
Percent Fast at Time Points	-
Gallons of Fuel Used	139.19
Passenger Miles per Gallon of Fuel	63.5
Passenger Miles per Seat Mile	-

ROUTE 170

Route 170 (the Strand Streaker) provides service between the City of Coronado and Palm City/Nestor via Imperial Beach. Route 170 operates daily except Sunday. Monday through Friday it operates between 5:42 AM and 5:16 PM. During AM and PM peaks, buses run at 30 minute headways. Midday service operates at 60 minute headways, as does Saturday service. Saturday service operates between 8:00 AM and 5:15 PM. Three buses are required for weekday service and one bus is required for Saturday service along the 39 mile route. Performance data is not available.

Route Data

Scheduled Miles - Weekdays	70,863	
Scheduled Miles - Saturdays	11,721	
Total Revenue Passengers	71,220	
Total Annual Passengers	76,563	
Basic Fare Riders	49,572	64.9%
Transfer Riders	5,343	7.0%
All Saverpass Riders	21,468	28.1%
Average Fare	.61	
Number of Trips	32	
Total Passengers	368	
Passengers per Trip	12	
Revenue Miles	182.2	

Performance Data

Not available.

ROUTE 601

Provides local service between downtown National City and residential/ commercial areas to the east. Route 601 operates daily except Sunday Between 6:15 AM and 7:08 PM at 30 minute headways. Two buses are required to serve the 15 mile route.

Route Data

Scheduled Miles	353	
Total Revenue Passengers	111,000	
Total Annual Passengers	173,640	
Basic Fare Riders	37,200	21.4%
Cash Student Riders	66,000	38.0%
Cash Senior Riders	7,800	4.5%
Transfer Riders	44,040	25.4%
All Saverpass Riders	10,800	6.2%
Average Fare	.37	

Performance Data

Number of Trips	53
Total Passengers	690
Passengers per Trip	13.0
Passengers per Trip/Average Max. Load	1.30
Percent of Trips Over Capacity	1.9
Revenue Miles	332.9
Passengers per Revenue Mile	2.1
Revenue Miles Over Capacity	3.1
% of Revenue Miles of Capacity	0.9
Passenger Miles	1,711.0
Average Trip Length in Miles	2.5
Passenger Miles per Trip	32.3
Revenue Hours	22.12
Passenger per Revenue Hours	21.2
Passenger Hours	117.45
Average Trip Length in Minutes	10.2
Passenger Minutes per Trip	133.0
Percent Slow at Time Points	6.20
Percent Fast at Time Points	3.84
Gallons of Fuel Used	72.38
Passenger Miles per Gallon of Fuel	33.6
Passenger Miles per Seat Mile	0.097
Average Miles per Average Capacity	0.19

ROUTE 602

Provides local service between downtown National City and residential/ commercial areas to the east. Route 602 operates daily except Sunday between 6:35 AM and 7:18 PM at 30 minute headways. Two buses are required to provide service along the 14 mile route.

Route Data

Scheduled Miles	355	
Total Revenue Passengers	123,600	
Total Annual Passengers	214,560	
Basic Fare Riders	60,000	28.0%
Cash Student Riders	33,600	15.7%
Cash Senior Riders	30,000	13.9%
Transfer Riders	63,360	29.5%
Free Riders	13,200	6.2%
All Saverpass Riders	14,400	6.7%
Average Fare	.37	

Performance Data

Number of Trips	53
Total Passengers	893
Passengers per Trip	16.8
Passengers per Trip/Average Max. Load	1.68
Percent of Trips Over Capacity	0.0
Revenue Miles	347.3
Passengers per Revenue Mile	2.6
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	1,613.1
Average Trip Length in Miles	1.8
Passenger Miles per Trip	30.4
Revenue Hours	25.78
Passenger per Revenue Hours	34.6
Passenger Hours	120.07
Average Trip Length in Minutes	8.1
Passenger Minutes per Trip	79.32
Percent Slow at Time Points	25.00
Percent Fast at Time Points	0.35
Gallons of Fuel Used	75.50
Passenger Miles per Gallon of Fuel	21.4
Passenger Miles per Seat Mile	0.888
Average Miles per Average Capacity	0.19

ROUTE 603

Provides local service between central National City and industrial areas in the western area of the City. Route 603 operates daily except Sundays between 7:33 AM and 6:43 PM at 60 minute headways. One bus is required to provide service along the 7.0 mile route.

Route Data

Scheduled Miles	80	
Total Revenue Passengers	13,440	
Total Annual Passengers	24,600	
Basic Fare Riders	7,200	29.3%
Cash Student Riders	1,440	5.9%
Cash Senior Riders	4,800	19.5%
Free Riders	1,800	7.3%
All Saverpass Riders	3,000	12.1%
Transfer Riders	6,360	25.4%
Average Fare	.37	

Performance Data

Number of Trips	23
Total Passengers	87
Passengers per Trip	4.9
Passengers per Trip/Average Max. Load	1.26
Percent of Trips Over Capacity	0.0
Revenue Miles	77.5
Passengers per Revenue Mile	0.9
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	130.7
Average Trip Length in Miles	1.5
Passenger Miles per Trip	5.8
Revenue Hours	6.23
Passenger per Revenue Hours	14.0
Passenger Hours	10.43
Average Trip Length in Minutes	8.2
Passenger Minutes per Trip	27.22
Percent Slow at Time Points	0.94
Percent Fast at Time Points	0.00
Gallons of Fuel Used	16.85
Passenger Miles per Gallon of Fuel	7.8
Passenger Miles per Seat Mile	0.032
Average Miles per Average Capacity	0.06

ROUTE 604

Provides local service in central and northern National City. Route 604 operates on Sundays only between 7:06 AM and 8:58 PM at 60-minute headways. One bus is required to provide service along the 11-mile route. Performance data is not available.

Route Data

Scheduled Miles	132	
Total Revenue Passengers	5,040	
Total Annual Passengers	9,360	
Basic Fare Riders	2,400	25.6%
Cash Student Riders	960	10.6%
Cash Senior Riders	1,680	18.0%
Free Riders	840	8.9%
All Saverpass Riders	7,720	7.7%
Transfer Riders	2,760	29.5%
Average Fare	.37	

ROUTE 701

Provides local service between Rohr Industries (western Chula Vista) and Otay via central Chula Vista. Buses operate every day except Sunday. Service is provided between 5:48 AM and 8:48 PM at 60 minute headways. One bus is required to serve the 14.8 mile route.

Route Data

Scheduled Miles	37,036	
Total Revenue Passengers	90,200	
Total Annual Passengers	123,200	
Basic Fare Riders	35,436	28.8%
Cash Student Riders	41,900	34.0%
Cash Senior Riders	12,600	10.2%
Transfer Riders	33,264	27.0%
Average Fare	.23	

Performance Data

Number of Trips	29
Total Passengers	814
Passengers per Trip	28.1
Passengers per Trip/Average Max. Load	1.59
Percent of Trips Over Capacity	3.4
Revenue Miles	432.8
Passengers per Revenue Mile	1.9
Revenue Miles Over Capacity	1.3
% of Revenue Miles of Capacity	0.3
Passenger Miles	3,479.6
Average Trip Length in Miles	4.3
Passenger Miles per Trip	120.0
Revenue Hours	27.0
Passenger per Revenue Hours	30
Passenger Hours	316.3
Average Trip Length in Minutes	15.94
Passenger Minutes per Trip	447.52
Percent Slow at Time Points	16.03
Percent Fast at Time Points	1.46
Gallons of Fuel Used	108.46
Passenger Miles per Gallon of Fuel	32.1
Passenger Miles per Seat Mile	0.158
Average Miles per Average Capacity	0.33

ROUTE 702

Provides local service between Rohr Industries and Otay via central Chula Vista. Route 702 operates daily between 5:58 AM and 6:39 PM at 60 minute headways. One bus is required to serve the 15.6 mile route.

Route Data

Scheduled Miles	35,555	
Total Revenue Passengers	88,200	
Total Annual Passengers	117,600	
Basic Fare Riders	42,300	36.0%
Cash Student Riders	37,200	31.6%
Cash Senior Riders	8,700	7.4%
Transfer Riders	29,400	25.0%
Average Fare	.22	

Performance Data

Number of Trips	13
Total Passengers	372
Passengers per Trip	28.6
Passengers per Trip/Average Max. Load	1.76
Percent of Trips Over Capacity	0.0
Revenue Miles	207.9
Passengers per Revenue Mile	1.8
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	1,589.9
Average Trip Length in Miles	4.3
Passenger Miles per Trip	122.3
Revenue Hours	12.73
Passenger per Revenue Hours	29.2
Passenger Hours	97.45
Average Trip Length in Minutes	15.72
Passenger Minutes per Trip	449.77
Percent Slow at Time Points	30.39
Percent Fast at Time Points	0.00
Gallons of Fuel Used	52.10
Passenger Miles per Gallon of Fuel	30.5
Passenger Miles per Seat Mile	0.150
Average Miles per Average Capacity	0.31

ROUTE 703

Provides local service between Rohr Industries and east Chula Vista. Route 703 operates weekdays between 6:02 AM and 6:51 PM at 60 minute headways. One bus is required to serve the 17.9 mile route.

Route Data

Scheduled Miles	29,983	
Total Revenue Passengers	40,800	
Total Annual Passengers	56,000	
Basic Fare Riders	20,680	37.0%
Cash Student Riders	15,900	28.4%
Cash Senior Riders	4,300	7.7%
Transfer Riders	15,120	27.0%
Average Fare	.22	

Performance Data

Number of Trips	26
Total Passengers	272
Passengers per Trip	10.5
Passengers per Trip/Average Max. Load	1.25
Percent of Trips Over Capacity	0.0
Revenue Miles	244.1
Passengers per Revenue Mile	1.1
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	1,347.5
Average Trip Length in Miles	5.0
Passenger Miles per Trip	51.8
Revenue Hours	12.40
Passenger per Revenue Hours	21.9
Passenger Hours	72.02
Average Trip Length in Minutes	15.89
Passenger Minutes per Trip	166.19
Percent Slow at Time Points	14.97
Percent Fast at Time Points	0.00
Gallons of Fuel Used	6.118
Passenger Miles per Gallon of Fuel	22.0
Passenger Miles per Seat Mile	0.108
Average Miles per Average Capacity	0.16

ROUTE 704

Provides local service between Rohr Industries and east Chula Vista. Route 704 operates every day except Sunday. Buses run between 6:23 AM and 10:10 PM at 60 minute headways. One and a half buses are required to serve the 18.9 mile route.

Route Data

Scheduled Miles	44,170	
Total Revenue Passengers	69,000	
Total Annual Passengers	100,800	
Basic Fare Riders	50,752	50.3%
Cash Student Riders	15,800	15.7%
Cash Senior Riders	3,000	3.0%
Transfer Riders	31,248	31.0%
Average Fare	.27	

Performance Data

Number of Trips	29
Total Passengers	403
Passengers per Trip	13.9
Passengers per Trip/Average Max. Load	1.54
Percent of Trips Over Capacity	0.0
Revenue Miles	284.6
Passenger Per Revenue Mile	1.4
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	1,837.4
Average Trip Length in Miles	4.6
Passenger Miles per Trip	63.4
Revenue Hours	12.87
Passenger per Revenue Hours	31.3
Passenger Hours	86.18
Average Trip Length in Minutes	12.83
Passenger Minutes per trip	178.31
Percent Slow at Time Points	26.73
Percent Fast at Time Points	0.50
Gallons of Fuel Used	71.32
Passenger Miles per Gallon of Fuel	25.8
Passenger Miles per Seat Mile	0.127
Average Miles per Average Capacity	0.18

ROUTE 705

Provides local service between central Chula Vista and east Chula Vista. Route 705 operates every day except Sunday from 5:55 AM to 9:22 PM at 60 minute headways. One and a half buses are required to serve the 19.4 mile route.

Route Data

Scheduled Miles	44,510	
Total Revenue Passengers	54,000	
Total Annual Passengers	78,400	
Basic Fare Riders	32,896	42.0%
Cash Student Riders	18,400	23.5%
Cash Senior Riders	2,800	3.6%
Transfer Riders	24,304	31.0%
Average Fare	.23	

Performance Data

Number of Trips	32
Total Passengers	395
Passengers per Trip	12.3
Passengers per Trip/Average Max. Load	1.23
Percent of Trips Over Capacity	0.0
Revenue Miles	302.4
Passengers per Revenue Mile	1.3
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	2,398.1
Average Trip Length in Miles	6.1
Passenger Miles per Trip	74.9
Revenue Hours	13.60
Passenger per Revenue Hours	29.0
Passenger Huors	109.30
Average Trip Length in Minutes	16.68
Passenger Minutes per Trip	204.94
Percent Slow at Time Points	17.46
Percent Fast at Time Points	2.65
Gallons of Fuel Used	75.79
Passenger Miles per Gallon of Fuel	31.6
Passenger Miles per Seat Mile	0.155
Average Miles per Average Capacity	0.20

ROUTE 706

Provides downtown shuttle service between Rohr Industries and central Chula Vista. Route 706 operates every day except Sunday between 9:20 AM and 5:00 PM at 20 minute headways. One bus is required to serve the 3.6 mile route.

Route Data

Scheduled Miles	13,101	
Total Revenue Passengers	43,300	
Total Annual Passengers	50,400	
Basic Fare Riders	43,344	86.0%
Cash Student Riders	-	
Cash Senior Riders	-	
Transfer Riders	7,056	14.0%
Average Fare	.10	

Performance Data

Number of Trips	21
Total Passengers	276
Passengers per Trip	13.1
Passengers per Trip/Average Max. Load	1.88
Percent of Trips Over Capacity	0.0
Revenue Miles	83.1
Passengers per Revenue Mile	3.3
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	317.4
Average Trip in Length in Miles	1.2
Passenger Miles per Trip	15.1
Revenue Hours	7.92
Passenger per Revenue Hours	34.8
Passenger Hours	31.38
Average Trip Length in Minutes	6.82
Passenger Minutes per Trip	89.67
Percent Slow at Time Points	58.90
Percent Fast at Time Points	0.00
Gallons of Fuel Used	20.81
Passenger Miles per Gallon of Fuel	15.2
Passenger Miles per Seat Mile	0.075
Average Miles per Average Capacity	0.14

ROUTE 707

Provides local service between central Chula Vista and Otay. Route 707 operates except Sunday between 6:10 AM and 7:07 PM at 30 minute headways. One bus is required to serve the 6.6 mile route.

Route Data

Scheduled Miles	32,750	
Total Revenue Passengers	22,300	
Total Annual Passengers	33,600	
Basic Fare Riders	10,212	30.4%
Cash Student Riders	7,900	23.5%
Cash Senior Riders	4,400	13.1%
Transfer Riders	11,088	33.0%
Average Fare	.20	

Performance Data

Number of Trips	26
Total Passengers	270
Passengers per Trip	10.4
Passengers per Trip/Average Max. Load	1.73
Percent of trips Over Capacity	0.0
Revenue Miles	182.5
Passengers per Revenue Mile	1.5
Revenue Miles Over Capacity	0.0
% of Revenue Miles of Capacity	0.0
Passenger Miles	602.5
Average Trip Length in Miles	2.2
Passenger Miles per Trip	23.2
Revenue Hours	9.95
Passenger per Revenue Hours	27.1
Passenger Hours	33.87
Average Trip Length in Minutes	7.53
Passenger Minutes per Trip	78.15
Percent Slow at Time Points	5.04
Percent Fast at Time Points	6.59
Gallons of Fuel Used	45.73
Passenger Miles per Gallon of Fuel	13.2
Passenger Miles per Seat Mile	0.065
Average Miles per Average Capacity	0.12

APPENDIX III
TRANSIT RIDERSHIP PROFILE

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APPENDIX III

[illegible] PROFILE
(1981)

	1	9	29	32	33	51	100
MODE TO BUS STOP							
Transferred	27.5	35.2	4.1	12.7	72.6	58.8	34.4
Walked	68.2	63.6	88.6	82.1	26.5	38.9	58.7
Drove	0.0	0.0	1.6	1.7	0.0	0.5	4.0
Was Driven	3.4	1.2	0.7	3.0	0.1	1.4	4.0
Bicycled	0.7	0.0	0.0	0.3	0.0	0.0	0.0
Dial-a-Ride	0.0	0.0	0.0	0.2	0.0	0.0	0.0
FARE USED FOR THIS TRIP							
Cash	58.5	40.0	90.2	78.7	24.7	43.7	54.2
Transfer Slip	26.8	53.1	6.6	9.6	67.1	42.0	19.0
Pass	15.0	0.0	0.3	0.6	1.0	0.5	5.5
Transfer and Cash	0.0	6.9	2.9	7.4	6.6	6.8	17.8
Pass and Cash	0.0	0.0	0.0	3.0	0.4	0.0	3.0
Single Fare Ticket	0.0	0.0	0.0	0.9	0.2	0.0	0.7
PURPOSE AT ORIGIN OF TRIP							
Home	53.5	53.7	51.5	54.4	42.1	41.2	51.4
Work	27.0	29.6	27.2	20.0	24.0	18.8	36.6
School	3.8	1.1	4.1	5.5	12.1	3.6	9.1
Shopping	0.5	1.7	2.4	7.3	6.4	17.1	0.2
Personal Business	10.4	9.7	7.5	10.2	13.9	10.5	3.7
Social	0.0	0.0	3.1	0.6	0.4	0.0	0.8
Recreation	1.2	4.2	4.2	1.9	0.3	8.8	0.2
Other	0.0	0.0	0.0	0.1	0.0	0.0	0.0
MODE FROM THE BUS STOP							
Transfer	27.0	18.0	23.7	25.5	15.2	16.1	51.6
Walk	71.7	81.0	77.1	72.5	84.5	80.6	44.4
Drive	0.0	0.0	0.0	0.7	0.0	1.1	3.9
Will be Driven	1.3	0.0	0.2	1.3	0.3	2.2	1.1
Bike	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dial-a-Ride	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PURPOSE AT THE DESTINATION							
Home	40.4	36.4	34.4	38.2	58.2	39.1	40.2
Work	26.1	45.5	25.6	27.1	12.9	10.1	36.7
School	5.4	3.5	4.7	4.0	6.4	2.3	6.4
Shopping	4.9	0.0	3.2	9.9	6.0	18.4	3.3
Personal Business	14.9	3.5	14.3	15.3	16.9	27.3	5.9
Social	4.3	6.5	6.0	1.6	1.5	0.0	3.5
Recreation	1.0	4.4	1.6	3.1	3.0	2.8	4.0
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Multi-Purpose	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NORMAL USE OF TRANSIT							
6-7 Days a Week	48.4	43.4	33.0	30.3	20.6	27.5	20.2
4-5 Days a Week	28.2	37.1	37.4	32.1	41.0	24.2	51.4
1-3 Days a Week	10.6	12.0	13.1	15.5	15.1	20.1	6.0
Several Times Per Month	5.4	0.0	6.4	8.5	7.3	20.7	2.6
Occasionally	7.4	7.5	9.3	13.4	16.0	7.5	9.8
LENGTH OF TIME AS A BUS RIDER							
Less than One Month	5.9	8.7	12.5	9.4	12.2	8.7	6.1
One Month to One Year	22.5	35.1	38.9	30.6	36.1	38.3	25.6
One Year to Two Years	13.9	14.1	13.0	13.1	13.7	18.0	15.8
More than Two Years	57.7	42.1	35.6	46.9	38.0	37.0	44.5
RATING OF OVERALL SERVICE							
Good	69.8	69.4	68.3	58.0	52.5	66.2	53.5
Fair	21.8	27.7	26.0	35.4	40.8	29.9	41.1
Poor	8.4	12.9	5.7	6.6	6.7	3.9	5.4
RATING TRANSFER SERVICE							
Good	46.4	44.8	43.8	46.2	49.4	40.4	47.9
Fair	42.8	44.3	39.4	39.1	34.4	42.3	37.9
Poor	10.8	10.9	16.8	14.7	16.2	17.3	14.3
NUMBER OF VEHICLES IN HOUSEHOLD							
None	59.3	42.0	69.9	44.3	34.9	40.7	46.5
One	24.8	31.5	22.0	36.5	42.3	23.3	38.1
Two	12.2	17.6	5.9	14.9	18.1	29.3	17.4
Three or More	3.7	7.9	2.3	4.3	5.6	6.7	4.0

	1	9	29	32	33	51	100
WAS A PRIVATE VEHICLE AVAILABLE FOR THIS TRIP?							
Yes	10.1	9.6	14.8	16.3	17.3	9.1	26.8
No	89.9	90.4	85.2	83.7	83.7	90.9	73.2
WHAT ALTERNATIVE TO TRANSIT FOR THIS TRIP?							
Auto Driver	6.2	7.7	13.0	10.7	12.3	4.5	24.0
Auto Passenger	32.9	31.4	34.0	23.3	24.5	17.6	31.7
Bicycle	4.3	4.8	8.3	7.2	5.4	0.0	4.2
Walking	16.0	26.9	19.1	12.2	19.2	26.6	7.0
Taxi	13.2	13.6	16.5	15.4	12.0	15.7	7.8
Dial-a-Ride	12.5	2.3	3.4	3.8	1.3	1.9	4.9
Social Service	0.0	2.2	0.2	1.2	0.3	1.0	0.6
Not Take Trip	17.9	23.1	15.5	26.2	20.0	23.7	19.8
ARE YOU A LICENSED DRIVER?							
Yes	67.9	52.4	69.7	53.6	58.9	35.2	65.3
No	33.1	47.6	30.3	46.4	42.1	64.8	34.7
HOW MANY LICENSED DRIVERS IN HOUSEHOLD?							
None	13.3	19.2	11.5	15.7	9.8	19.0	10.0
One	38.6	41.2	33.9	32.1	34.2	24.5	26.6
Two	31.0	19.6	31.7	32.0	36.4	34.9	42.0
Three	14.7	15.0	10.2	12.6	10.7	7.9	11.5
More than Three	14.4	6.0	13.7	7.6	8.9	14.7	9.9
PERSONS IN HOUSEHOLD							
One	11.2	13.8	14.0	12.0	7.6	12.3	13.3
Two	28.6	17.2	28.4	30.7	17.5	12.2	20.4
Three	24.2	18.3	20.4	18.1	25.8	23.1	23.8
Four	15.1	28.2	13.4	17.6	18.8	6.1	17.4
Five	13.9	12.0	14.2	13.1	9.4	23.1	14.0
Six or More	37.0	10.5	17.6	10.5	20.9	23.2	12.1
PASSENGER STATUS							
Visitor-Tourist	4.5	5.6	3.1	9.7	7.2	11.8	1.6
Member of Armed Forces	43.4	3.1	65.8	8.1	10.6	1.7	19.6
Student	15.9	21.9	10.1	20.2	35.9	21.2	17.8
Employed	48.3	58.1	62.4	50.2	40.1	39.5	65.0
Volunteer Worker	0.0	3.5	3.4	2.9	3.0	1.7	2.6
Homemaker	4.9	13.6	7.5	17.6	26.5	24.9	10.0
Retired	0.0	8.5	3.4	4.3	3.5	5.1	4.9
Handicapped	1.0	4.5	3.7	3.5	3.5	7.0	0.5
SEX OF RIDER							
Male	66.0	34.3	70.8	48.4	39.3	33.9	58.1
Female	34.0	65.7	29.2	51.6	60.7	66.1	41.9
AGE OF RIDER							
12-16 Years	1.6	0.0	1.7	2.7	5.1	9.6	1.3
17-18 Years	8.1	8.9	6.2	9.3	11.6	6.2	8.6
19-24 Years	30.3	36.9	44.0	27.7	35.0	28.9	27.6
25-44 Years	37.9	40.4	34.9	36.6	36.4	25.6	40.7
45-59 Years	17.2	9.5	9.1	13.6	5.5	18.8	11.7
60 or Over	5.9	4.3	4.1	10.2	6.4	10.9	10.1
HOUSEHOLD INCOME							
Less than $5,000	26.5	16.5	16.7	28.5	20.9	25.8	13.7
$5,000 - $10,000	25.4	32.8	34.4	30.2	25.1	23.2	23.9
$10,000 - $15,000	11.6	16.5	20.2	18.8	20.0	18.4	25.4
$15,000 - $20,000	3.2	19.4	13.8	10.0	11.9	8.1	10.1
$20,000 - $25,000	7.1	13.3	7.9	6.2	5.7	7.8	14.9
$25,000 - $35,000	0.0	2.7	3.4	2.7	2.7	1.7	7.6
Over $35,000	6.2	3.6	5.6	3.6	3.7	15.0	4.6
ETHNIC BACKGROUND							
White	15.7	47.1	53.4	38.0	44.3	24.4	68.8
Black	80.3	23.1	29.0	19.4	11.3	2.1	10.1
Hispanic	0.3	23.8	12.2	34.7	35.5	69.1	14.6
Oriental	3.2	4.8	5.5	3.3	6.3	4.5	4.5
Other	0.4	0.0	0.3	0.4	0.9	0.0	0.3
Indeterminable	1.1	1.2	0.7	0.2	1.7	0.0	1.6

BEST DOCUMENT AVAILABLE

MCTC ROUTE PASSENGER PROFILE
(1981)

	601	602	603
MODE TO BUS STOP			
Transferred	45.1	42.3	54.7
Walked	54.6	56.2	45.3
Drove	0.0	0.8	0.0
Was Driven	0.3	0.7	0.0
Bicycled	0.0	0.0	0.0
Dial-a-Ride	0.0	0.0	0.0
FARE USED FOR THIS TRIP			
Cash	54.1	52.2	35.7
Transfer Slip	39.5	35.8	54.3
Pass	4.1	0.2	0.0
Transfer and Cash	0.3	9.8	2.9
Pass and Cash	1.8	1/2	7.1
Single Fare Ticket	0.2	0.8	0.0
PURPOSE AT ORIGIN OF TRIP			
Home	41.5	58.5	66.3
Work	13.1	11.0	10.4
School	33.4	17.3	15.7
Shopping	4.6	6.3	0.0
Personal Business	6.8	5.2	7.6
Social	0.0	1.1	0.0
Recreation	0.3	0.6	0.0
Other	0.3	0.0	0.0
Multi-Purpose	0.0	0.0	0.0
MODE FROM BUS STOP			
Transfer	25.1	30.2	67.1
Walk	74.6	69.8	32.9
Drive	0.0	0.0	0.0
Will be Driven	0.3	0.0	0.0
Bicycle	0.0	0.0	0.0
Dial-a-Ride	0.0	0.0	0.0
PURPOSE AT THE DESTINATION			
Home	54.6	43.3	30.9
Work	12.6	20.6	18.2
School	20.5	16.6	4.9
Shopping	2.9	6.7	14.3
Personal Business	4.4	9.7	31.7
Social	4.7	2.3	0.0
Recreation	0.3	0.8	0.0
Other	0.0	0.0	0.0
Multi-Purpose	0.0	0.0	0.0
NORMAL USE OF TRANSIT			
6-7 Days a Week	25.4	31.5	19.2
4-5 Days a Week	45.6	39.4	28.3
1-3 Days a Week	12.3	16.4	19.2
Several Times per Month	5.1	2.1	26.9
Occasionally	11.6	10.6	6.4
LENGTH OF TIME AS A BUS RIDER			
Less than One Month	14.6	8.4	43.2
One Month to One Year	47.4	51.1	33.4
One Year to Two Years	17.1	19.0	9.0
More than Two Years	20.6	21.5	14.4
RATING OF OVERALL SERVICE			
Good	59.6	67.5	58.3
Fair	29.8	29.2	39.1
Poor	10.6	3.3	2.6
RATING TRANSFER SERVICE			
Good	52.0	57.8	58.3
Fair	35.6	31.0	21.9
Poor	12.4	11.2	19.8
NUMBER OF VEHICLES IN HOUSEHOLD			
None	27.5	50.0	56.1
One	32.0	29.5	24.2
Two	29.0	16.6	5.3
Three or More	11.5	3.9	14.4

	601	602	603
WAS A PRIVATE VEHICLE AVAILABLE FOR THIS TRIP?			
Yes	14.8	9.4	29.7
No	85.2	90.6	70.3
WHAT ALTERNATIVE TO TRANSIT FOR THIS TRIP?			
Auto Driver	8.0	3.9	15.4
Auto Passenger	24.6	18.1	6.0
Bicycle	4.3	4.7	11.1
Walking	42.8	47.1	22.5
Taxi	8.0	9.8	0.0
Dial-a-Ride	3.3	1.9	30.5
Social Service	0.0	2.6	0.0
Not Take Trip	9.0	11.9	14.5
ARE YOU A LICENSED DRIVER?			
Yes	37.8	38.5	34.6
No	62.2	61.5	65.4
HOW MANY LICENSED DRIVERS IN HOUSEHOLD?			
None	10.8	21.5	43.0
One	21.7	35.0	10.5
Two	37.6	30.0	34.4
Three	15.0	4.6	5.1
More than Three	14.9	8.9	7.0
PERSONS IN HOUSEHOLD			
One	5.8	12.3	12.1
Two	11.9	17.3	27.3
Three	16.6	23.1	4.7
Four	20.6	11.6	6.0
Five	19.7	15.3	21.9
Six or More	25.4	20.4	28.0
PASSENGER STATUS			
Visitor-Tourist	1.8	0.7	0.0
Member of Armed Forces	3.6	3.0	3.4
Student	61.7	32.2	24.1
Employed	30.7	36.0	42.0
Volunteer Worker	2.3	4.5	0.0
Homemaker	9.6	20.5	9.8
Retired	3.9	13.9	19.6
Handicapped	0.3	3.4	17.3
SEX OF RIDER			
Male	48.5	31.2	26.4
Female	51.5	68.8	73.6
AGE OF RIDER			
12-16 Years	19.8	6.2	4.6
17-18 Years	35.1	18.7	15.2
19-24 Years	9.8	21.4	1.3
25-44 Years	20.7	28.3	36.5
45-59 Years	10.9	10.5	5.1
60 or Over	3.7	14.9	37.3
HOUSEHOLD INCOME			
Less than $5,000	13.5	32.7	53.6
$5,000 - $10,000	35.1	18.7	15.2
$10,000 - $15,000	20.6	10.7	3.3
$15,000 - $20,000	8.1	3.7	24.7
$20,000 - $25,000	13.3	7.9	2.7
$25,000 - $35,000	8.7	4.4	9.6
Over $35,000	7.8	1.9	0.0
ETHNIC BACKGROUND			
White	24.4	36.9	41.8
Black	26.3	15.8	6.4
Hispanic	35.5	39.3	25.0
Oriental	13.5	7.6	26.8
Other	0.0	0.0	0.0
Indeterminable	0.3	0.4	0.0

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CNT ROUTE
PASSENGER PROFILE
(1981)

	1	2	3	4	5	7
MODE TO BUS STOP						
Transferred	23.0	17.1	37.6	38.6	29.5	26.3
Walked	73.3	80.0	57.0	61.7	66.5	70.0
Drove	0.5	0.0	0.0	0.0	0.0	0.0
Was Driven	1.9	2.1	4.6	1.1	3.4	0.8
Bicycled	0.5	0.0	0.0	0.0	0.0	0.0
Dial-a-Ride	N/A	N/A	N/A	N/A	N/A	N/A
FARE USED FOR THIS TRIP						
Cash	86.2	89.4	79.5	86.8	80.7	85.6
Transfer Slip	9.0	4.9	14.3	6.9	12.0	10.2
Pass	N/A	N/A	N/A	N/A	N/A	N/A
Transfer & Cash	3.7	4.3	5.3	4.6	6.1	1.7
Pass & Cash	N/A	N/A	N/A	N/A	N/A	N/A
Single Fare Ticket	N/A	N/A	N/A	N/A	N/A	N/A
WILL TRANSFER RIDES AT BUS STOP	21.2	21.2	26.6	27.7	21.5	128.4
PURPOSE AT THE DESTINATION						
Home	50.7	39.3	40.5	48.0	32.5	28.2
Work	13.2	20.7	6.3	13.7	9.7	16.2
School	17.2	22.9	41.5	27.4	43.7	36.2
Shopping	6.5	5.0	3.6	1.2	3.1	4.3
Personal Business	3.0	6.4	4.5	4.6	6.0	9.6
Social Recreation	4.0	1.4	1.8	2.2	1.8	3.4
Other	5.4	4.3	1.8	2.9	4.2	4.3
NUMBER OF VEHICLES IN HOUSEHOLD						
None	19.6	25.0	26.2	22.0	25.9	30.3
One	29.3	35.2	33.6	36.2	29.1	34.3
Two	27.3	25.7	32.7	36.6	22.8	19.2
Three +	23.8	14.1	13.5	15.2	22.2	16.2
WAS A PRIVATE VEHICLE AVAILABLE FOR THIS TRIP?						
Yes	23.7	24.1	21.7	23.3	23.4	27.1
No	76.3	75.9	78.3	76.7	76.6	82.9
WHAT ALTERNATIVE TO TRANSIT FOR THIS TRIP?						
Auto Driver	16.2	20.8	28.2	17.8	23.4	11.4
Auto Passenger	14.2	14.2	18.4	19.8	18.6	13.0
Bicycle	9.5	9.2	4.6	10.2	6.8	4.3
Walking	30.9	30.0	22.9	12.6	21.0	40.0
Taxi	5.0	1.5	5.5	4.2	1.9	1.8
San Diego Transit	8.9	4.4	5.5	7.8	3.8	21.7
Not Take Trip	11.1	10.8	14.5	18.5	17.9	3.5
Other	4.2	7.7	6.4	9.0	7.6	4.3
PERSONS IN HOUSEHOLD						
One	3.8	4.6	12.7	7.7	14.5	9.5
Two	15.3	14.1	20.6	19.9	14.4	17.9
Three	18.2	16.5	18.7	19.2	20.8	24.2
Four	20.4	19.0	14.7	17.3	17.0	15.6
Five	17.3	19.0	13.7	18.0	16.3	13.7
Six or More	24.9	24.8	19.6	17.9	17.0	18.9
PASSENGER STATUS						
Visitor-Tourist	2.1	0.0	1.0	0.6	1.3	1.0
Member of Armed Forces	0.3	1.6	1.0	4.3	1.3	1.0
Student	55.2	52.5	75.0	73.7	78.5	61.9
Employed	38.0	48.4	46.2	45.3	39.2	35.1
Volunteer Worker	N/A	N/A	N/A	N/A	N/A	N/A
Homemaker	N/A	N/A	N/A	N/A	N/A	N/A
Retired	5.9	5.7	4.8	5.6	4.4	7.2
Handicapped	N/A	N/A	N/A	N/A	N/A	N/A
SEX OF RIDER						
Male	39.2	41.0	42.7	48.7	38.0	33.3
Female	60.8	59.0	57.3	59.3	61.0	66.7
AGE OF RIDER						
13-16 Years	20.3	15.6	9.6	3.1	13.0	19.0
17-18 Years	37.6	44.5	52.9	59.6	56.3	44.0
19-24 Years						
25-44 Years	18.6	18.9	26.9	26.5	20.8	22.0
45-59 Years	8.5	14.8	6.8	10.0	10.7	7.0
60 or Over	7.0	6.3	3.8	6.8	4.4	8.0
HOUSEHOLD INCOME						
Less than $5,000	16.2	8.4	23.0	16.3	23.9	29.2
$5 - 10,000	24.8	23.2	24.2	27.9	23.1	23.1
$10 - 15,000	17.4	17.9	17.5	16.3	20.0	20.0
$15 - 20,000	20.8	23.1	18.7	18.6	17.9	20.0
$20 - 25,000						
$25 - 35,000						
Over $35,000	20.8	27.4	17.6	21.0	17.1	7.7

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APPENDIX IV
PARATRANSIT OPERATORS

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APPENDIX IV
TAXICAB OPERATIONAL AREAS

Jurisdiction	Operating Area	Cab Company	Number Licensed Cabs
Chula Vista	Chula Vista, South County, National City, Imperial Beach	Diamond Cab	6
	Chula Vista, San Diego	Mack's Hack	1
	Chula Vista, San Diego Region	Yellow Cab	5
Imperial Beach	Imperial Beach, National City, Chula Vista South County	Diamond Cab	4
	Imperial Beach, San Diego Region	Yellow Cab	1
National City	National City, Chula Vista, Bonita, Imperial Beach, South County	Diamond Cab	42
	National City, San Diego	Radio Cab	10
	National City, San Diego Region	Yellow Cab	20
San Diego	Mira Mesa, Kearny Mesa, Rancho Bernardo, Poway	Poway-Rancho Bernardo Cab	5
	San Diego, Del Mar, San Dieguito, Vista, San Marcos	Bill's Cab	2
	San Diego, Chula Vista	Mack's Hack (ICOA)	1
	San Diego, El Cajon, East County	Cromley Cab (Coop) (East County Cab)	5
	San Diego, National City	Radio Cab	10
	San Diego and Region	Yellow Cab	280
	San Diego City and Unincorporated Areas	Brown-and-White Red Cab	5 14
	San Diego, Chula Vista, National City, South County, Imperial Beach	Diamond Cab	1
	City of San Diego Only	Checker Cab	15
		City Cab (USA)	4
		La Jolla Cab	11
		Martin Cab	5
		USA Cab	9
		SINGLE VEHICLE OPERATORS	
		Coop	30
		ICOA	18
		Radio	5
		USA	1
		Non-affiliated	6
San Diego County	Unincorporated Area, San Diego	Brown-and-White Cab Red Cab	6 14
	South County, National City, Chula Vista Imperial Beach, San Diego	Diamond Cab	42

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APPENDIX V
CENTRE CITY
PEDESTRIAN COUNTS

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APPENDIX V

CENTRE CITY PEDESTRIAN COUNTS

Site		March 5			March 7			March 8		
Columbia Street between 'B' and 'C' Streets		North	South	Total	North	South	Total	North	South	Total
	7:00 AM to 9:00 AM	18	18	36	23	29	52	6	8	14
	11:00 AM to 1:00 PM	62	75	137	64	68	132	15	18	33
	4:00 PM to 6:00 PM	26	35	61	52	33	85	22	12	34
	9:00 PM to 10:00 PM	2	5	7	2	7	9	5	8	13
	TOTAL	108	133	241	141	137	278	48	46	94
Columbia Street between 'C' Street and Broadway		North	South	Total	North	South	Total	North	South	Total
	7:00 AM to 9:00 AM	38	37	75	23	11	34	11	17	28
	11:00 AM to 1:00 PM	72	94	166	64	60	124	52	77	129
	4:00 PM to 6:00 PM	50	72	122	75	63	138	46	60	106
	9:00 PM to 10:00 PM	27	13	40	32	9	41	23	15	38
	TOTAL	187	216	403	194	143	337	132	169	301
Broadway between First and Second Avenues (Southside)		East	West	Total	East	West	Total	East	West	Total
	7:00 AM to 9:00 AM	264	314	578	245	285	530	204	167	371
	11:00 AM to 1:00 PM	799	772	1571	803	682	1485	639	530	1169
	4:00 PM to 6:00 PM	713	628	1341	917	756	1673	706	714	1420
	9:00 PM to 10:00 PM	233	212	445	343	345	688	339	328	667
	TOTAL	2009	1926	3935	2308	2068	4376	1888	1739	3627
Broadway between First and Second Avenues (Northside)		East	West	Total	East	West	Total	East	West	Total
	7:00 AM to 9:00 AM	287	370	657	296	324	620	193	205	398
	11:00 AM to 1:00 PM	866	883	1749	759	817	1576	465	507	972
	4:00 PM to 6:00 PM	474	547	1021	454	712	1166	432	530	962
	9:00 PM to 10:00 PM	87	113	200	145	163	308	153	156	309
	TOTAL	1714	1913	3627	1654	2016	3670	1243	1398	2641
'C' Street between First and Front Street		East	West	Total	East	West	Total	East	West	Total
	7:00 AM to 9:00 AM	141	183	324	162	173	335	38	28	66
	11:00 AM to 1:00 PM	689	494	1183	554	451	1005	91	109	200
	4:00 PM to 6:00 PM	291	311	602	294	284	578	76	59	135
	9:00 PM to 10:00 PM	7	20	27	27	60	87	19	16	35
	TOTAL	1128	1008	2136	1037	968	2005	224	212	436
Broadway between Ninth and Tenth Avenues		East	West	Total	East	West	Total	East	West	Total
	7:00 AM to 9:00 AM	179	283	462	176	226	402	N/A	N/A	N/A
	11:00 AM to 1:00 PM	385	573	958	430	572	1002	N/A	N/A	N/A
	4:00 PM to 6:00 PM	407	383	790	419	401	820	N/A	N/A	N/A
	9:00 PM to 10:00 PM	79	99	178	81	80	161	80	74	154
	TOTAL	1050	1338	2388	1106	1279	2385	80	74	154

N/A: not available

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Site	March 5			March 7			March 8		
'B' Street between Ninth and Tenth Avenues	East	West	Total	East	West	Total	East	West	Total
7:00 AM to 9:00 AM	40	239	279	45	238	283	20	21	41
11:00 AM to 1:00 PM	155	172	327	130	177	307	57	60	117
4:00 PM to 6:00 PM	295	73	368	260	69	329	42	43	85
9:00 PM to 10:00 PM	6	19	26	11	11	22	N/A	N/A	N/A
TOTAL	496	503	1000	446	495	941	119	124	243
'C' Street between Ninth and Tenth Avenues	East	West	Total	East	West	Total	East	West	Total
7:00 AM to 9:00 AM	67	92	159	50	70	120	21	27	48
11:00 AM to 1:00 PM				175	215	390	72	58	130
March 25 substituted ——→ 11:00 AM to 2:00 PM	270	300	570						
for March 5 4:00 PM to 6:00 PM	116	56	181	109	98	207	41	37	78
TOTAL	453	457	910	334	383	717	134	122	256

Site	March 12			March 14			March 15		
Third Avenue between Broadway and 'C' Street	North	South	Total	North	South	Total	North	South	Total
7:00 AM to 9:00 AM	99	87	186	311	329	640	261	478	739
11:00 AM to 2:00 PM	894	879	1773	1310	1162	2472	899	677	1576
4:00 PM to 6:00 PM	186	271	457	231	454	685	147	248	395
TOTAL	1179	1237	2416	1852	1945	3797	1307	1403	2710
Broadway between Fourth and Fifth Avenues (Northside)	East	West	Total	East	West	Total	East	West	Total
7:00 AM to 9:00 AM	288	350	638	249	343	592	219	317	536
11:00 AM to 2:00 PM	1615	1795	3410	1744	2267	4011	1132	1430	2562
4:00 PM to 6:00 PM	469	646	1115	636	1005	1641	481	900	1381
TOTAL	2372	2791	5163	2629	3615	6244	1832	2647	4479
Broadway between Fourth and Fifth Avenues (Southside)	East	West	Total	East	West	Total	East	West	Total
7:00 AM to 9:00 AM	284	323	607	260	314	575	247	248	495
11:00 AM to 2:00 PM	1261	1361	2623	1556	1597	3153	1183	1290	2473
4:00 PM to 6:00 PM	541	680	1221	669	935	1604	663	896	1559
TOTAL	2086	2365	4451	2485	2846	5331	2093	2434	4527
'C' Street between Fourth and Fifth Avenues	East	West	Total	East	West	Total	East	West	Total
7:00 AM to 9:00 AM	197	146	325	218	218	436	174	118	242
11:00 AM to 2:00 PM	1649	1456	3105	2084	1909	3993	800	671	1471
4:00 PM to 6:00 PM	303	330	633	467	404	871	286	253	539
TOTAL	2131	1932	4063	2769	2531	5300	1210	1042	2252
'B' Street between Fourth and Fifth Avenues	East	West	Total	East	West	Total	East	West	Total
7:00 AM to 9:00 AM	150	132	282	171	166	337	32	78	110
11:00 AM to 2:00 PM	1193	1098	2290	1590	1467	3057	255	215	470
4:00 PM to 6:00 PM	180	233	413	357	253	610	103	86	189
TOTAL	1522	1463	3985	2118	1886	4004	390	379	769

N/A: not available

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Site	March 12					March 14					March 15				
Twelfth Avenue & Broadway Intersection	North	South	East	West	Total	North	South	East	West	Total	North	South	East	West	Total
7:00 AM to 9:00 AM	180	180	147	157	664	175	177	131	203	606	68	93	39	165	365
11:00 AM to 2:00 PM	427	579	447	582	2063	285	440	269	641	1635	183	351	188	483	1205
4:00 PM to 6:00 PM	159	191	228	243	821	98	178	212	319	807	96	218	160	268	742
TOTAL	766	950	850	982	3548	558	795	612	1163	3128	347	662	387	916	2312
Twelfth Avenue & 'C' Street Intersection	North	South	East	West	Total	North	South	East	West	Total	North	South	East	West	Total
7:00 AM to 9:00 AM	312	67	19	102	500	299	58	17	104	478	69	31	10	49	159
11:00 AM to 2:00 PM	271	330	83	245	929	245	268	58	162	733	152	91	38	90	371
4:00 PM to 6:00 PM	157	80	59	53	349	105	116	51	78	350	86	90	25	55	256
TOTAL	740	477	161	400	1778	649	442	126	344	1561	307	212	73	194	786

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APPENDIX VI
COMMUNITY DESCRIPTIONS

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BARRIO LOGAN
(City of San Diego)

Barrio Logan is a highly industrial area located to the south of Centre City adjacent to San Diego Bay. The most prominent characteristic of Barrio Logan is its Mexican-American community together with the waterfront industrial complex employing over 40,000 people. Barrio Logan is, also, home to the 32nd Street Naval Base. Pockets of commercial and high density residential zones are scattered throughout the area.

Area Size:	2,560 acres
1980 Population:	22,482
Gross Population Density:	8.8 persons/acre
Household Size:	3.26 persons
Housing Units:	6,807
	68% single-family
	32% multi-family
	0% mobile home
Percent Vacant:	6.51
Residential Density:	7.7 units/residential acre
Total Employment:	42,900
Military	41.0%
Manufacturing (durables)	18.6%
Federal Govt. (civilian)	9.1%

Major Employers:
- 32nd Street Naval Base
- Campbell Industries
- Health Services
- Kelco Company
- National Steel & Shipbuilding Company
- Ocean Fisheries
- Plant Maintenance
- San Diego Marine Construction Company
- Sun Harbor Industries
- Triple A Machine Shop
- Van Camps Seafood Company
- Westgate Terminals

Land Use	Acres	Percent
Single-Family Residential	590.4	23.1
Multi-Family Residential	295.2	11.5
Shopping Centers	0.2	-
Strip Commercial	421.3	16.5
Heavy Industry	144.0	5.6
Light Industry	348.9	13.6
Higher Education, Colleges & Universities	30.7	1.2
High Schools	0.8	-

Junior High Schools	20.8	0.8
Elementary Schools	34.2	1.3
Government Services	88.3	3.4
Churches, Cemeteries	11.9	0.5
Golf Courses	23.9	1.0
Local Parks	40.2	1.6
Transportation	315.0	12.3
Utilities	52.5	2.0
Military Reservations	87.9	3.5
Military Schools	16.2	0.6
Military Residential	39.3	1.5
TOTAL	2,561.7	100.0

Socioeconomic Profile

Sex: Female: 47.4 Male: 52.6

Median Age: 23.3

Age in Years (percent of total):

0-4	10.5%
5-17	24.7%
18-24	18.7%
25-59	35.1%
60-64	3.4%
Over 64	7.6%

Median Household Income: $6,515
Median Housing Value: $44,443
Median Rent: $161
Percent Owner-Occupied: 31.4

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
16.4%	20.9%	16.9%	17.0%	14.7%	6.7%	3.2%	3.2%	1.0%

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
40.7%	3.5%	23.3%	0.3%	32.2%	62.5%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
110	470	420	1,000	130

NATIONAL CITY

National City is located between Barrio Logan and the Sweetwater River. Approximately two-thirds of the western section of the City is included in the study area. The community is heavily influenced by its location along San Diego Bay. Approximately 300 acres with 8,300 feet of bay frontage are under the jurisdiction of the U.S. Navy.

Most of the area west of the San Diego Trolley line is comprised of heavy and light industrial uses. This is the largest lumber receiving area in the San Diego region. The area directly east of the guideway system is a mix of older residential and light industrial use. Much of this area is part of the National City redevelopment area. Currently, new industrial parks and commercial establishments are planned or being built in the area.

Area Size:	2,435 acres
1980 Population:	28,924
Gross Population Density:	11.9 persons/acre
Household Size:	2.86 persons
Housing Units:	8,243
	43% single-family
	55% multi-family
	2% mobile home
Percent Vacant:	4.03
Residential Density:	11.2 units/residential acre
Total Employment:	21,900
Military	43.0%
Retail Trade	17.7%
Manufacturing	10.1%
Service	9.0%

Major Employers:

- Alfred M. Lewis
- Diamond Cab Company
- E.J. Christman Park
- John Hancock Furniture
- Montgomery Wards
- Paradise Valley Hospital
- Pepper Industries
- San Diego County Welfare Department
- Southport & Southland Industrial Parks
- Western Lumber Company

Land Use	Acres	Percent
Single-Family Residential	655.8	27.0
Mobile Home Parks	9.6	0.4
Multi-Family Residential	73.2	3.0
Shopping Centers	39.0	1.6
Strip Commercial	289.7	11.9
Heavy Industry	233.9	9.6
Light Industry	596.7	24.5
Extractive Industry	117.8	4.8
High Schools	27.5	1.1
Junior High Schools	12.3	0.5
Elementary Schools	22.3	0.9
Government Services	17.7	0.7
Local Parks	23.3	1.0
Commercial Use of Open Space	12.0	0.5
Intensive Crop Agriculture	9.9	0.4
Transportation	109.0	4.5
Military Reservations	132.5	5.4
Military Residential	0.1	-
Water Areas	52.8	2.2
TOTAL	2,435.1	100.0

Social Economic Profile

Sex: Female: 41.3 Male: 58.7

Median Age: 23.6

Age in Years (percent of total):

0-4	10.3
5-17	15.8
18-24	29.6
25-59	35.0
60-64	2.3
Over 64	7.0

Median Household Income:	$9,883
Median Housing Value:	$57,894
Median Rent:	$206
Percent Owner-Occupied:	25.5

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
5.1%	12.6%	14.4%	18.7%	20.6%	11.4%	6.5%	7.6%	3.1%

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
59.3%	10.4%	8.6%	0.8%	20.9%	39.5%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
100	510	360	970	130

CHULA VISTA

Chula Vista is located along San Diego Bay south of the Sweetwater River and 10 miles north of the International Border. Chula Vista is the second largest city in the San Diego region. The study area includes the area from the Bay to approximately one mile east of the San Diego Trolley line. The area east of the guideway system is mixed residential and commercial use. Chula Vista Shopping Center is one-half mile from the 'H' Street Station. The residential areas are a mix of medium density single-family developments and higher density areas of townhouses, condominiums and garden apartments. Several mobile home parks are also located within the study area. Rohr Corporation, the City's major employer, is located in the Tidelands areas, adjacent to the 'H' Street Trolley Station.

Area Size:	1,060 acres (or 2,397.5?)
1980 Population:	23,553
Gross Population Density:	24.1 persons/acre
Household Size:	2.22 persons
Housing Units:	10,988
	58% single-family
	31% multi-family
	11% mobile home
Percent Vacant:	4.64
Residential Density:	10.4 units/residential acre
Total Employment:	16,800
Manufacturing (durables)	58.0%
Retail Trade	17.9%
Services	8.2%

Major Employers:
- Allstate Insurance Company
- Auto Club of Southern California
- Bay General Hospital
- Broadway Department Store
- City of Chula Vista
- Community Hospital of Chula Vista
- Rohr Industries
- San Diego Gas & Electric
- Sears, Roebuck Company
- U.S. Post Office

Land Use	Acres	Percent
Single-Family Residential	692.1	28.9
Mobile Home Parks	93.6	3.9
Multi-Family Residential	269.9	11.3
Shopping Centers	68.5	2.9
Strip Commercial	325.2	13.6
Light Industry	234.7	9.8

Extractive Industry	32.3	1.4
High Schools	39.4	1.6
Junior High Schools	16.3	0.7
Elementary Schools	26.2	1.1
Government Services	25.0	1.0
Health Care Facilities	14.0	0.6
Local Parks	31.4	1.3
Commercial Use of Open Space	5.8	0.2
Intensive Crop Agriculture	117.1	4.8
Intensive Animal Agriculture	10.3	0.4
Transportation	89.5	3.7
Utilities	83.4	3.5
Water	222.8	9.3
TOTAL	2,397.5	100.0

Socioeconomic Profile

Sex: Female: 52.1 Male: 47.9

Median Age: 30.8

Age in Years (percent of total):

0-4	7.6
5-17	13.7
18-24	17.0
25-59	40.9
60-64	5.9
Over 64	14.9

Median Household Income:	$11,623
Median Housing Value:	$71,321
Median Rent:	$236
Percent Owner-Occupied:	34.5

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
3.9%	10.0%	12.2%	17.2%	20.9%	12.8%	7.8%	10.1%	5.1%

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
82.4%	4.0%	2.4%	0.5%	10.7%	25.8%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
70	570	560	1,200	160

OTAY
(Unincorporated)

Otay is the unincorporated area south of Chula Vista and north of the Otay River. The area is evenly divided between vacant and developed land. Development is characterized by a mix of both commercial/industrial and residential uses. Residential uses consist primarily of older single-family units. Industrial uses vary widely, but most establishments are small and utilize open storage.

Area Size:	2,248 acres
1980 Population:	23,762
Gross Population Density:	10.6 persons/acre
Household Size:	2.50 persons
Housing Units:	9,927
	59% single-family
	23% multi-family
	8% mobile home
Percent Vacant:	4.81
Residential Density:	9.4 units/residential acre
Total Employment:	5,900
Manufacturing (non-durables)	27.8%
Retail	24.0%
Local Government	15.7%
Services	10.8%

Major Employers:
- California Clothes (RATNER)
- Crestwood Manufacturing
- Flo-Nor
- Pacific Telephone & Telegraph
- Star News Publishing Company

Land Use	Acres	Percent
Spaced Residential	31.1	1.4
Single-Family Residential	795.5	35.4
Mobile Home Parks	226.0	10.1
Multi-Family Residential	94.7	4.2
Shopping Centers	57.9	2.6
Strip Commercial	151.4	6.7
Light Industry	169.2	7.5
Extractive Industry	76.6	3.4
High Schools	5.7	0.3
Junior High Schools	23.4	1.0
Elementary Schools	43.7	1.9
Churches, Cemeteries	6.0	0.3
Golf Courses	159.7	7.1

Intensive Crop Agriculture	85.3	3.8
Intensive Animal Agriculture	0.4	-
Field Crops	193.0	8.6
Transportation	38.7	1.7
Utilities	74.3	3.3
Water Areas	15.0	0.7
TOTAL	2,247.6	100.0

Socioeconomic Profile

Sex: Female: 51.2 Male: 48.8

Median Age: 28.4

Age in Years (percent of total):

0-4	8.7
5-17	16.5
18-24	17.8
25-59	39.2
60-64	5.1
Over 64	12.7

Median Household Income:	$11,253
Median Housing Value:	$70,072
Median Rent:	$246
Percent Owner-Occupied:	39.6

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
3.1%	9.6%	12.9%	18.8%	22.5%	13.1%	7.5%	8.9%	3.6%

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
75.2%	4.8%	3.4%	0.7%	15.9%	38.4%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
60	460	380	900	120

PALM CITY/NESTOR
(City of San Diego)

Palm City/Nestor is located between San Diego Bay on the north, the Tia Juana River Valley on the south, Imperial Beach on the west, and Interstate 805 on the east. The area is mixed open space, agriculture, residential, commercial, and light industrial use. Recently, the area has been developing rapidly. Existing housing is medium density mixed with convenience commercial developments. New units comprise a mix of single-family townhouse and condominium developments.

Area Size:	4,530 acres
1980 Population:	24,234
Gross Population Density:	5.0 persons/acre
Household Size:	3.31 persons
Housing Units:	7,745
	75% single-family
	8% multi-family
	17% mobile homes
Percent Vacant:	5.5%
Residential Density:	7.4 units/residential acre
Total Employment:	1,700
Local Government	26.8%
Retail	17.0%
Construction	15.5%
Agriculture	12.0%
Major Employers:	

Land Use	Acres	Percent
Spaced Residential	107.1	2.3
Single-Family Residential	700.3	15.5
Mobile Home Parks	138.7	3.1
Multi-Family Residential	95.9	2.1
Strip Commercial	71.0	1.6
Light Industry	26.0	0.5
Extractive Industry	892.3	19.7
High Schools	16.9	0.3
Junior High Schools	75.9	1.7
Elementary Schools	37.9	0.8
Churches, Cemeteries	3.5	0.1
Local Parks	27.1	0.6
Intensive Crop Agriculture	167.5	3.7
Intensive Animal Agriculture	20.4	0.5
Field Crops	1,748.0	38.6
Transportation	200.4	4.4
Utilities	7.6	0.2

State-Owned Wildlands	116.7	2.6
Military Reservations	17.1	0.4
Military Residential	1.1	-
Water Areas	58.1	1.3
TOTAL	4,529.5	100.0

Socioeconomic Profile

Sex: Female: 50.8 Male: 49.2

Median Age: 25.1

Age in Years (percent of total):

0-4	10.9
5-17	25.2
18-24	13.6
25-59	43.5
60-64	2.6
Over 64	4.2

Median Household Income:	$13,535
Median Housing Value:	$76,560
Median Rent:	$237
Percent Owner-Occupied:	63.1

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
1.2%	5.0%	8.6%	16.1%	25.1%	17.3%	10.6%	12.1%	4.0%

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
66.0%	15.0%	2.9%	0.4%	15.7%	35.8%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
130	530	190	850	110

SAN YSIDRO
(City of San Diego)

San Ysidro is located across the border from Tijuana, B.C., Mexico. Currently, the community is a mix of an older border community, new suburbs and agricultural lands. The old town is comprised of small, older single-family houses, stores and businesses. The new development is scattered throughout the community. Light industries are located along the SD&AE Railroad and Interstates 805 and 5. Trucking, warehouses, offices, and imports are some of the industries located here. Visitor-serving facilities are located near the border crossing. The Otay Mesa area, east of San Ysidro, is primarily open spaces and agricultural. Brown Field Municipal Airport and related industries are located in this area.

Area Size:	10,860 acres
1980 Population:	34,030
Gross Population Density:	3.1 persons/acre
Household Size:	4.03 persons
Housing Units:	8,990
	75% single-family
	19% multi-family
	6% mobile homes
Percent Vacant:	5.97
Residential Density:	6.4 units/residential acre
Total Employment:	5,300
Local Government	27.4%
Retail Trade	21.3%
Federal (civilian)	16.0%
Services	11.0%
Major Employers:	

Land Use	Acres	Percent
Spaced Residential	210.9	1.9
Single-Family Residential	970.6	9.0
Mobile Home Parks	31.7	0.3
Multi-Family Residential	193.8	1.8
Shopping Centers	6.8	0.1
Strip Commercial	122.9	1.1
Light Industry	36.8	0.3
Extractive Industry	27.7	0.3
High Schools	43.3	0.4
Junior High Schools	33.6	0.3
Elementary Schools	101.0	0.9
Government Services	14.5	0.1
Churches, Cemeteries	3.0	-

Local Parks	89.8	0.8
Commercial Use of Open Space	156.0	1.4
Intensive Crop Agriculture	74.5	0.7
Intensive Animal Agriculture	8.3	0.1
Field Crops	6,622.5	61.0
Transportation	1,107.0	10.2
Federal Wildlands	777.7	7.2
Military Reservations	227.9	2.1
TOTAL	10,860.5	100.0

Socioeconomic Profile

Sex: Female: 51.6 Male: 48.4

Median Age: 22.8

Age in Years (percent of total):

0-4	9.1
5-17	32.3
18-24	11.9
25-59	40.5
60-64	1.9
Over 64	4.3

Median Household Income:	$6,548
Median Housing Value:	$73,294
Median Rent:	$216
Percent Owner-Occupied:	61.9

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
15.9%	20.6%	16.8%	17.0%	14.7%	6.8%	3.4%	3.5%	1.3%

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
52.5%	17.1%	3.5%	0.4%	26.5%	55.8%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
220	660	230	1,100	150

IMPERIAL BEACH

Imperial Beach is located on the Pacific Ocean and is not directly served by the San Diego Trolley. The City is primarily residential. The Imperial Beach Naval Air Station is located along the Tia Juana Estuary.

Area Size:	2,860 acres
1980 Population:	22,689
Gross Population Density:	7.9 persons/acre
Household Size:	2.88 persons
Housing Units:	8,164
	58% single-family
	39% multi-family
	3% mobile homes
Percent Vacant:	4.86
Residential Density:	8.8 units/residential acre
Total Employment:	5,700
Local Government	36.4%
Retail	31.3%
Services	16.0%
Military	%
Major Employers:	

Land Use	Acres	Percent
Single-Family Residential	788.8	27.6
Mobile Home Parks	13.8	0.4
Multi-Family Residential	121.7	4.3
Shopping Centers	4.9	0.2
Strip Commercial	97.1	3.4
Heavy Industry	0.4	-
Light Industry	381.7	13.3
Extractive Industry	12.4	0.4
High Schools	55.1	2.0
Elementary Schools	28.3	1.0
Government Services	16.4	0.6
Churches, Cemeteries	3.4	0.1
Local Parks	37.6	1.3
Commercial Use of Open Space	1.3	0.1
Field Crops	23.0	0.8
Transportation	324.3	11.3
State-Owned Wildlands	275.6	9.6
Military Reservations	302.5	10.6
Military Residential	7.4	0.3
Water Areas	364.1	12.7
TOTAL	2,859.8	100.0

Socioeconomic Profile

Sex: Female: 48.6 Male: 51.4

Median Age: 24.0

Age in Years (percent of total):

0-4	11.7
5-17	19.9
18-24	21.7
25-59	40.1
60-64	2.5
Over 64	4.1

Median Household Income:	$11,263
Median Housing Value:	$67,701
Median Rent:	$252
Percent Owner-Occupied:	33.3

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
2.6%	9.4%	13.0%	19.1%	23.2%	13.5%	7.6%	8.6%	3.0%

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
79.6%	7.0%	2.9%	1.0%	9.5%	21.3%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
100	550	150	800	70

CENTRE CITY
(City of San Diego)

Centre City San Diego is located along the eastern shores of the San Diego Bay, at the north end of the light rail corridor. The area is the hub of financial and government activities in the San Diego region. Currently, numerous redevelopment projects are under construction or planned for Centre City. The projects include new residential development, office buildings, hotels, retail centers, entertainment places, and transportation projects.

Area Size:	945 acres
1980 Population:	9,266
Gross Population Density:	9.8 persons/acre
Household Size:	1.33 persons
Housing Units:	5,813
	6% single-family
	94% multi-family
	0% mobile homes
Percent Vacant:	7.40
Residential Density:	134.2 units/residential acre
Total Employment:	55,000
Manufacturing	6.4%
Transportation, Utilities	8.5%
Wholesale Trade	6.3%
Retail Trade	12.9%
Finance, Insurance, Real Estate	15.9%
Services	23.6%
Government	24.3%

Major Employers:

3,000 or More Employees
- Pacific Telephone & Telegraph (4 locations)
- San Diego Gas & Electric (2 locations)
- Solar

1,000 to 2,999 Employees
- Ratner Clothing Corporation
- San Diego City (2 locations)
- San Diego City College
- San Diego Police Department
- San Diego County
- San Diego County Courthouse
- U.S. Federal Office Building
- U.S. Navy: 11th Naval District

500 to 999 Employees
- San Diego County Sheriff Department
- San Diego Transit Corporation
- San Diego Yellow Cabs, Incorporated
- Southern California 1st National Bank (2 locations)

200 to 499 Employees
ADT - Sterling Security Service (14)
California Laundry and Dry Cleaners (15)
Centre City Adult Center (16)
EDS Service Corporation (17)
El Cortez Hotel (18)
F.W. Woolworth Company (19)
Greyhound Lines, Incorporated (20)
Home Federal Savings & Loan (21)
International Motel (22)
ITT Continental Baking Company (23)
Kelly Labor Division (24)
KFMB Radio and T.V. (25)
Central Library (26)
Naval Facilities (27)
Pacific Maritime Association of California (28)
Royal Inn at the Wharf (29)
San Diego Federal Savings & Loan (30)
San Diego Trust and Savings (31)
Security Pacific National Bank (32)
Westgate Plaza (33)
Xerox Corporation (34)

Land Use	Acres	Percent
Single-Family Residential	29.8	3.3
Multi-Family Residential	13.5	1.5
Strip Commercial	570.7	62.4
Heavy Industry	6.2	0.7
Light Industry	40.0	4.4
Higher Education, Colleges, Universities	30.7	3.4
High Schools	0.8	0.1
Government Services	76.2	8.3
Churches, Cemeteries	13.9	1.5
Local Parks	2.8	0.3
Transportation	90.2	9.8
Utilities	9.0	1.0
Military Reservations	30.8	3.3
TOTAL	914.6	100.0

Socioeconomic Profile

Sex: Female: 28.7 Male: 71.3

Median Age: 42.1

Age in Years (percent of total):

0-4	2.1%
5-17	2.7%
18-24	16.3%
25-59	48.7%
60-64	5.6%
Over 64	24.6%

Median Household Income:	$4,102
Median Housing Value:	$69,737
Median Rent:	$144
Percent Owner-Occupied:	2.3

Income Distribution (in total percentage)

$1,000-2,999	$3,000-4,999	$5,000-6,999	$7,000-9,999	$10,000-14,999	$15,000-19,999	$20,000-24,999	$25,000-39,999	$40,000+
34.6%	27.9%	16.0%	11.6%	6.7%	2.0%	0.7%	0.5%	ø

Racial Distribution (in total percentage):

White	Asian	Black	Indian	Other	Hispanic Ethnicity
74.8%	3.3%	8.9%	0.8%	12.2%	24.5%

Transportation-Handicapped Persons: (estimates)

Under 15	16-64	65 or Over	Total	Wheelchair Users
10	190	700	900	120

APPENDIX VII
LAND VALUES

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APPENDIX VII

LAND VALUES

The profile of land values in the study area is based upon land parcel appraisals gathered by the Metropolitan Transit Development Board during 1978 and 1979.

During this period, several land parcels were purchased for the construction of the light rail transit line. Most of the land acquisitions are located around the LRT station sites. The land parcel appraisals were used to determine the fair market value based upon property listings and sales at the time of the MTDB purchases.

The cost of the property acquisitions is based on the market values of the land itself, as well as improvements to the property and the annual income derived from the property. Included in the market value are existing land use, best use, zoning and land use patterns, and the location. Land parcels are appraised according to the community in which they are located. Each community has particular demographic and geographic features which influence the land values.

Barrio Logan

As shown in Figure 1, MTDB acquired a 4.24 acre parcel of land at 1535 Newton Avenue. The land is located along the guideway operational right-of-way near the Imperial Avenue Station at 13th Street. The property is zoned industrial (M-2), but there were no property improvements at the time of purchase. MTDB paid $17,200 or $0.093 per square foot for the property. The property was purchased on June 25, 1979.

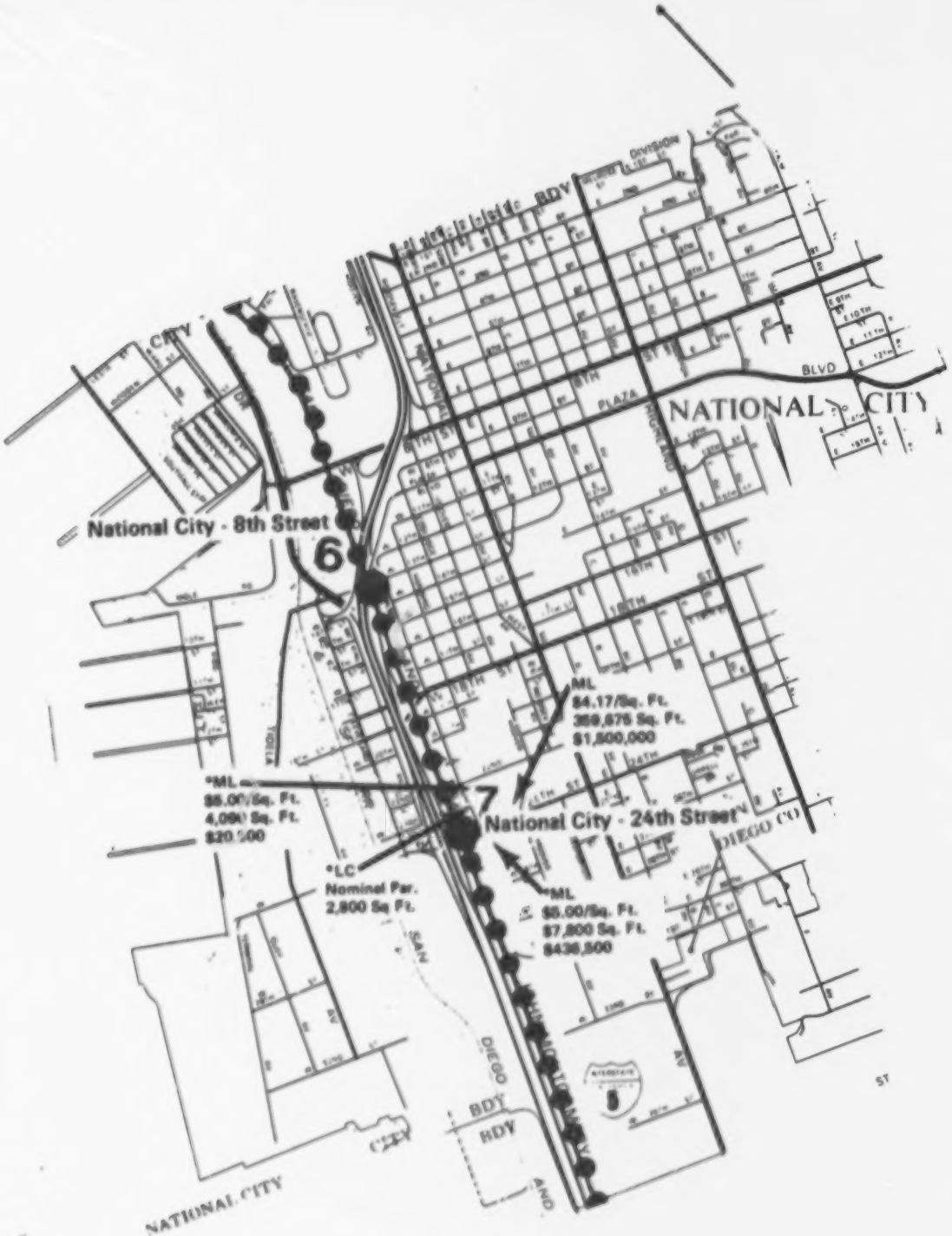
At the time of the MTDB acquisition, there were four other properties listed for sale in the area. All of the properties are zoned and used for industrial use. Property improvements were present on all parcels used as market indicators. The property values range from $3.26 to $8.72 per square foot. The property value is based on location, current use, and land improvements.

National City

MTDB purchased three parcels of land to build the 24th Street Station in National City. As shown in Figure 2, the land parcels are located along Wilson Avenue between 22nd and 24th Streets. The guideway operational right-of-way is located west of these sites. The land parcels were zoned for light industrial use (ML and LC). The land parcels range in size from 2,800 square feet to two acres.

BEST DOCUMENT AVAILABLE

FIGURE VII-I
Guideway Implementation Study
Land Parcel Appraisals
BARRIO LOGAN



*MTDB Acquisition

FIGURE VII-2
Guideway Implementation Study
Land Parcel Appraisals
NATIONAL CITY

BEST DOCUMENT AVAILABLE

MTDB acquired two of the properties at a cost of $5.00 per square foot. The cost of the third parcel was an unannounced nominal fee. There were no property improvements on any of the parcels.

The parcel at 517 West 24th Street was purchased from the National Meat Packers, Incorporated. The land at the northwest corner of 23rd Avenue and Wilson Avenue was acquired from the City of National City for a nominal fee. The third parcel located at the southeast corner of 22nd Avenue and Wilson Avenue was bought from the Great Western Savings & Loan Association.

One other land parcel in the area was listed at the time of the MTDB property acquisitions. This property was used as a market indicator. The property was located at the northwest corner of 24th Avenue and Hoover Avenue. The 8.3 acre site was listed at $1,500,000 or $4.17 per square foot. The land was zoned light industrial and there were property improvements at that time.

Chula Vista

MTDB acquired two land parcels in the Chula Vista area. The first parcel is located at the site of the 'H' Street Station, as shown in Figure 3. The 27,700 square foot or .64 acre parcel was the site of an abandoned service station. Property improvements included a metal building, two bays with the ten pumps removed, and three underground tanks. The property was zoned Visitor Commercial Zone within a precise plan modifying district (CVP). Under Section 19.56.040, Title 19, of the Chula Vista Municipal Code, whenever the "P" district is established on the zoning map of the city, the uses of lands and buildings, height of buildings, yards and other open spaces and other information shown on the precise plan and adopted for said district by the planning commission shall take precedence over the otherwise applicable provisions of the zone modified by this provision. The previous seller of the property had planned to construct a small shopping center, but zoning would not allow this sort of improvement. MTDB paid $243,000 or $8.77 per square foot for the property.

The second MTDB acquisition is located along the guideway operational right-of-way at Naples Street in the unincorporated area near Chula Vista. The property was undeveloped at the time of purchase. The land was zoned for moderate impact industrial (M-54). The parcel was purchased on June 30, 1979 for $114,390 or $2.50 per square foot.

At the time of the MTDB land acquisitions, there were 18 other parcels in the community for sale. These properties were used as market indicators to determine a fair market price for the MTDB parcels. Ten of the properties were zoned residential, either one and two-family residence (R-2), or apartment residence (R-3), three parcels were zoned thoroughfare commercial (CT). One parcel was zoned central business (CB) and one was zoned administrative and professional office (CO). Two properties were zoned for industrial use. Only one other property was zoned CVP.

The property for sale that was zoned CVP was located at 750 E Street near the guideway right-of-way. The 6,600 square foot land parcel sold

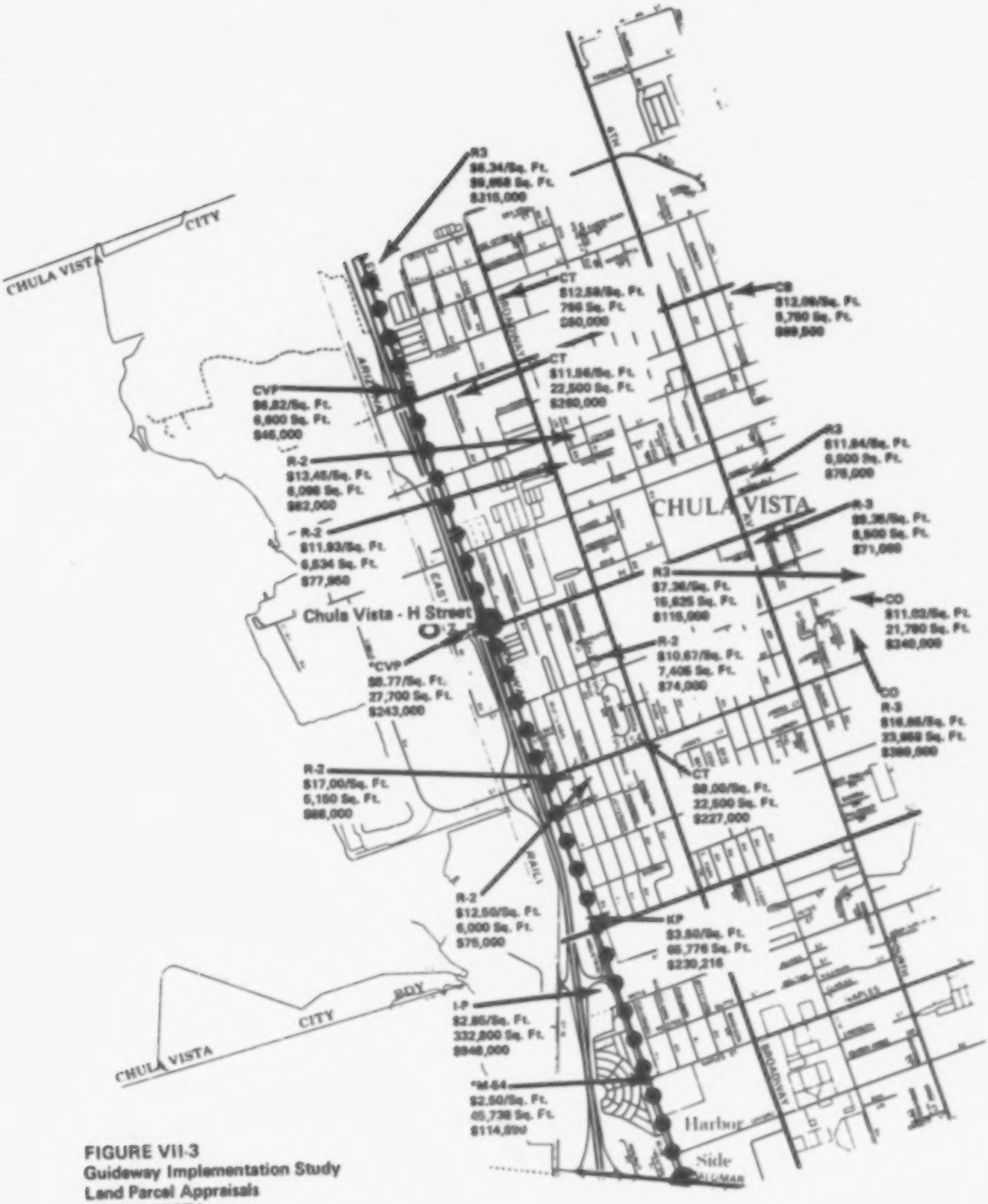


FIGURE VII-3
Guideway Implementation Study
Land Parcel Appraisals
CHULA VISTA

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for $45,000 or $6.82 per square foot. At the time of purchase, there was a 200-square foot tourist center on the property. The buyer planned to raze this building and construct an office building containing eight offices. Since the property is located adjacent to the railroad tracks, the buyer planned to construct a concrete block wall to buffer the noise factor.

The properties zoned R-2 ranged from $10.67 to $17.09 per square foot. This zoning had the highest market value. The R-3 properties ranged from $6.34 to $11.54 per square foot. The dual zone (CO-R3) land parcel sold for $16.65 per square foot. The commercial zoned properties ranged from $6.82 to $12.59 per square foot. The industrial zoned parcels cost $2.85 and $3.50 per square foot.

Otay

In order to construct the Palomar Street station, it was necessary for MTDB to acquire a 1.56 acre or 67,926 square foot parcel of land in Otay, as shown in Figure 4. The land, previously owned by San Diego Gas & Electric Company, was zoned for limited impact industrial use (M-52). The property was used as a utility transmission site. The parcel is located at the southeast corner of Palomar Street and Industrial Boulevard. The property was assessed by the California State Board of Equalization at a price of $40,076 or $0.56 per square foot.

When MTDB purchased the Palomar Street property, there were six other parcels for sale in the community. A valuation analysis of these properties was undertaken to determine a fair market value of the required property. Four of the land parcels were zoned for moderate impact industrial use. The prices ranged from $1.61 to $4.48 per square foot. The remaining parcels were zoned for commercial use. They were valued at $11.80 and $2.96 per square foot.

Palm City

MTDB purchased two parcels of land in Palm City (see Figure 5) in order to build the Palm Avenue Station. The total property area is 4.27 acres or 186,115 square feet. The property was previously used as a single family residence. However, the City of San Diego zoned the land for medium density residential (R-2) and light manufacturing (M-1A). The property was purchased from a private individual at a price of $537,900. The cost breakdown is $2.60 per square foot for the industrial zoned property and $2.35 per square foot for the medium density residential zoned property.

Three properties for sale in the community were used as market indicators. Two of the parcels were zoned for medium density residential. They were priced at $2.20 and $2.11 per square foot. The third parcel was located in a special single family residence zone (R-1-5). The market value of the property was $15.55 per square foot.

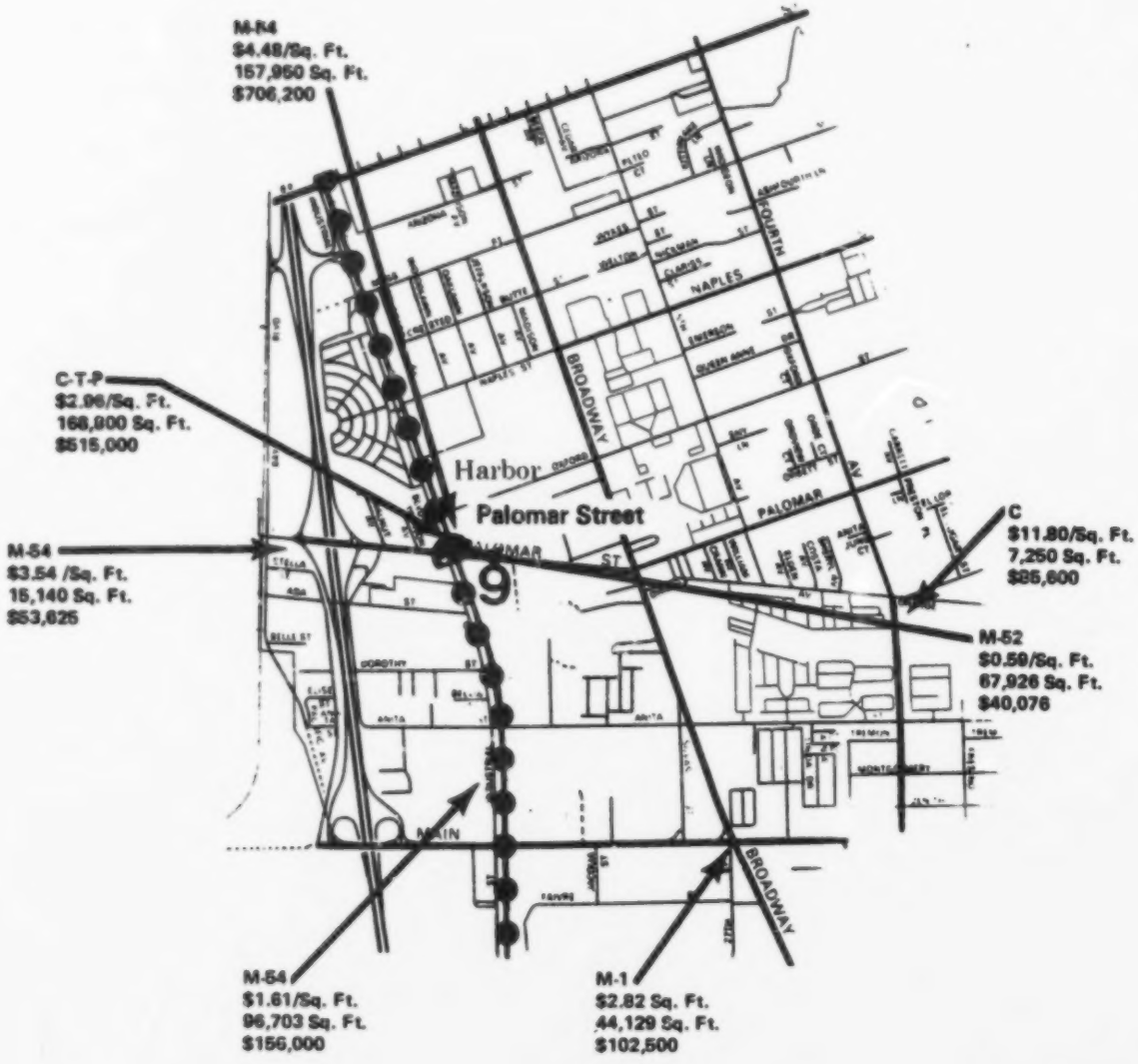

FIGURE VII-4
Guideway Implementation Study
Land Parcel Appraisals
OTAY

*MTDB Acquisition

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FIGURE VII-5
Guideway Implementation Study
Land Parcel Appraisals
PALM CITY

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Nestor-South San Diego

Figure 6 shows that MTDB acquired seven land parcels in the Nestor-South San Diego community. All of the properties were required to construct the Iris Avenue Station. Five of the land parcels were zoned commercial (CA). One of these parcels had a dual zone designation as agricultural (A-1-10), as well. The sixth property was zoned low density residential (R-2). The last parcel was included in an industrial zone (M-1B).

The first parcel of land purchased by MTDB is located at the northwest quadrant of Howard Avenue and Iris Avenue. The land covers 0.53 acres or 23,090 square feet. At the time of purchase, the site was undeveloped, but was zoned R-2. MTDB paid $28,000 or $1.21 per square foot for the property. The land was purchased from private individuals.

The second MTDB acquisition is located at the northeast quadrant of the guideway operational right-of-way and Iris Avenue. The 2.25 acre land was purchased from the Southern Pacific Industrial Development Company at a cost of $345,000 or $3.50 per square foot. At the time of purchase, the land was zoned M-1B, but was vacant. Remarks on the property appraisal state that the market value of the required property without subdivision improvements is estimated to be $94,700. However, it is noted that additional comments are included in the Assumptions and Limiting Conditions report.

The third land parcel is located adjacent to, and north of, 3269 Beyer Boulevard. The 14,473 square foot parcel was vacant at the time of purchase. The property was zoned CA. MTDB acquired the property for $44,672 or $3.09 per square foot. The property was purchased from a private party.

The fourth MTDB acquisition is located at 3283 Beyer Boulevard, near Dairy Mart Road and the guideway right-of-way. An unoccupied single family residence occupied the 6,860 square foot parcel. The property was zoned CA. MTDB purchased the land for $23,863 from a private party.

Another parcel of land required by MTDB to build the Iris Avenue Station is located behind 3269 Beyer Boulevard. The land, zoned commercial, was vacant at the time of purchase. The land was purchased from a limited partnership for $6,121 or $1.75 per square foot. The parcel covers 3,498 square feet.

MTDB purchased a 12,383 square foot parcel of land located at the northwest quadrant of Beyer Boulevard and Dairy Mart Road. The land was zoned commercial, but was vacant at the time of purchase. MTDB purchased the land from a limited partnership at a cost of $43,412 or $3.51 per square foot.

The final MTDB property acquisition for the Iris Avenue Station is located at 3171 Iris Avenue. The property was jointly zoned for commercial and agricultural use. At the time of purchase, the property was being used for commercial and industrial purposes. The 1.08 acre parcel was purchased for $188,180 or $4.00 per square foot from a limited partnership.

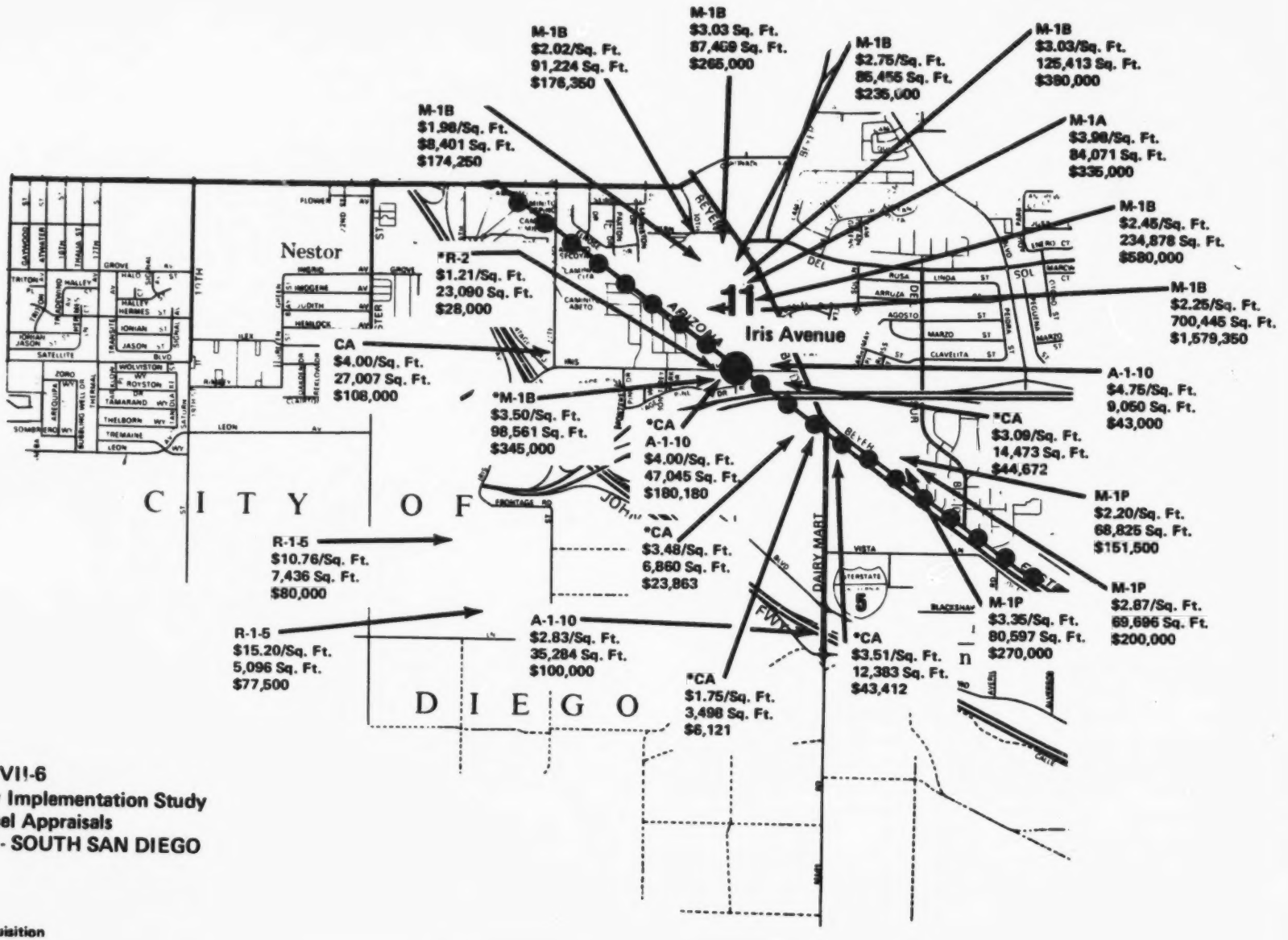

FIGURE VII-6
Guideway Implementation Study
Land Parcel Appraisals
NESTOR - SOUTH SAN DIEGO

***MTDB Acquisition**

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When MTDB acquired the Iris Avenue Station properties, there was 16 land parcels on the market in the area. These properties were used as market indicators when appraising the fair market price of the MTDB land. Eleven of the parcels were zoned for industrial use. Their value ranged from $1.98 to $3.98 per square foot.

Two of the land parcels were zoned for agricultural use. The market value of these properties was $4.75 and $2.83 per square foot. Another two property listings were zoned low density residential. Their value was listed at $15.20 and $10.76 per square foot.

Only one of the land parcels was zoned commercial. The property was listed at $4.00 per square foot.

San Ysidro

Only two parcels of land were required by MTDB to construct the San Ysidro Station at Beyer Boulevard and Smythe Avenue. Both parcels were zoned for medium density residential use.

The first property, as shown in Figure 7, was located at 4019 Beyer Boulevard West. The 15,131 square foot site was used for outdoor advertising structures at the time of purchase. This property value was assessed at $4.63 per square foot. MTDB purchased the property for $70,000. The property was purchased from the City of San Diego.

The other MTDB acquisition was located at 4055 Beyer Boulevard West. The 40,873 square foot parcel was vacant except for a dilapidated shed. The land was purchased from a private individual at the cost of $6.28 per square foot or $256,500.

When MTDB acquired the San Ysidro properties, there were 20 parcels listed on the market. Thirteen of the parcels were zoned for residential use, four were zoned low density residential and nine were zoned medium density residential. The low density residential properties ranged from $0.18 to $1.48 per square foot. The medium density properties ranged from $1.43 to $7.02 per square foot. Two of the low density properties were zoned for agriculture use, also.

Three land parcels were zoned for specialized commercial use (CS). The property values ranged from $1.70 to $5.04 per square foot. Two parcels were zoned commercial, with a value of $2.46 and $4.75 per square foot. One parcel was zoned for institutional (CO) and agricultural use. The property was listed at $1.60 per square foot.

The final land parcel for sale at the time of the MTDB acquisitions was zoned for industrial and commercial use. The market value was listed at $1.54 per square foot.

Note: The complete inventory of Guideway Corridor land values is available at the SANDAG offices under File 4d.

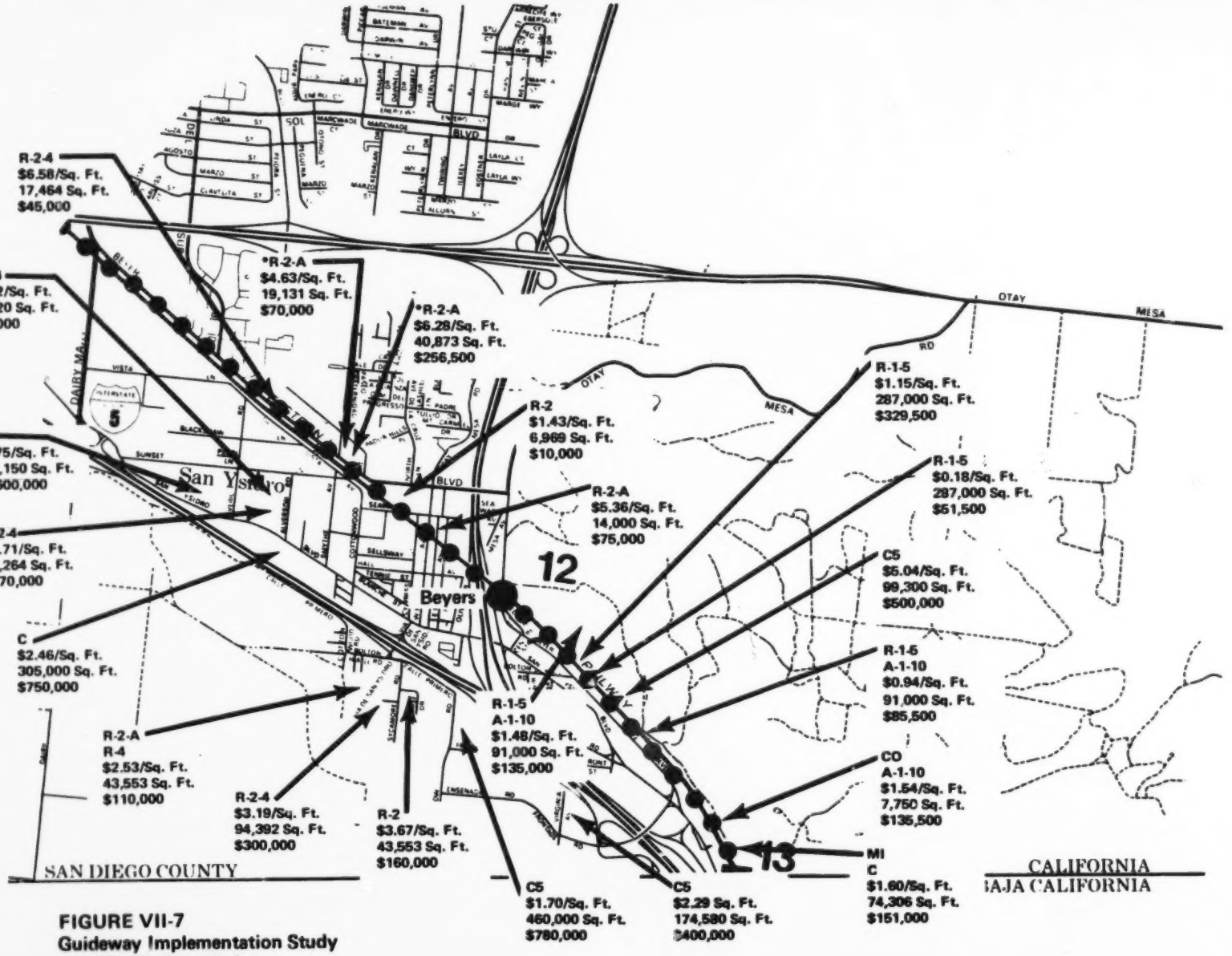

FIGURE VII-7
Guideway Implementation Study
Land Parcel Appraisals
SAN YSIDRO

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